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ABSTRACT

Activities developed and used with children and adults participating in the program offerings of the Edwin Gould Outdoor Education Centers are presented. Information describing most activities includes name, description of the activity, objectives, supervision or help required, procedures, time involved, size of area required, materials, suggestions and comments, suggested student level, and observation and evaluation criteria. Projects are grouped under five major categories. Fourteen outdoor academic activities include compass activities, mapping and map symbol practice, snow science, stalking the wild poem, and survival shelters. Seventeen natural history projects range from a scavenger hunt, camouflage, egg carton explorations, and plot studies to sun flecks, water in spring, and web of life. Thirty-three outdoor crafts and projects describe broom-making, city trail making, Coke bottle craft, hobo stoves, igloo construction, bird feeders, leaf prints, totem poles, wind chimes, and other activities. Thirty-one indoor craft projects include burlap weaving, candle dipping, crystal garden, Indian beadwork, milk carton puppets, shrunken head, and pudding paint. Six outdoor games and recreation activities are A-MAZE-ING, I Love New York Marathoners Club, Pirate Treasure Hunt, Predator/Prey Game, Trash Can Scoop Ball, and Winter Games - Snow Snake. (NEC)

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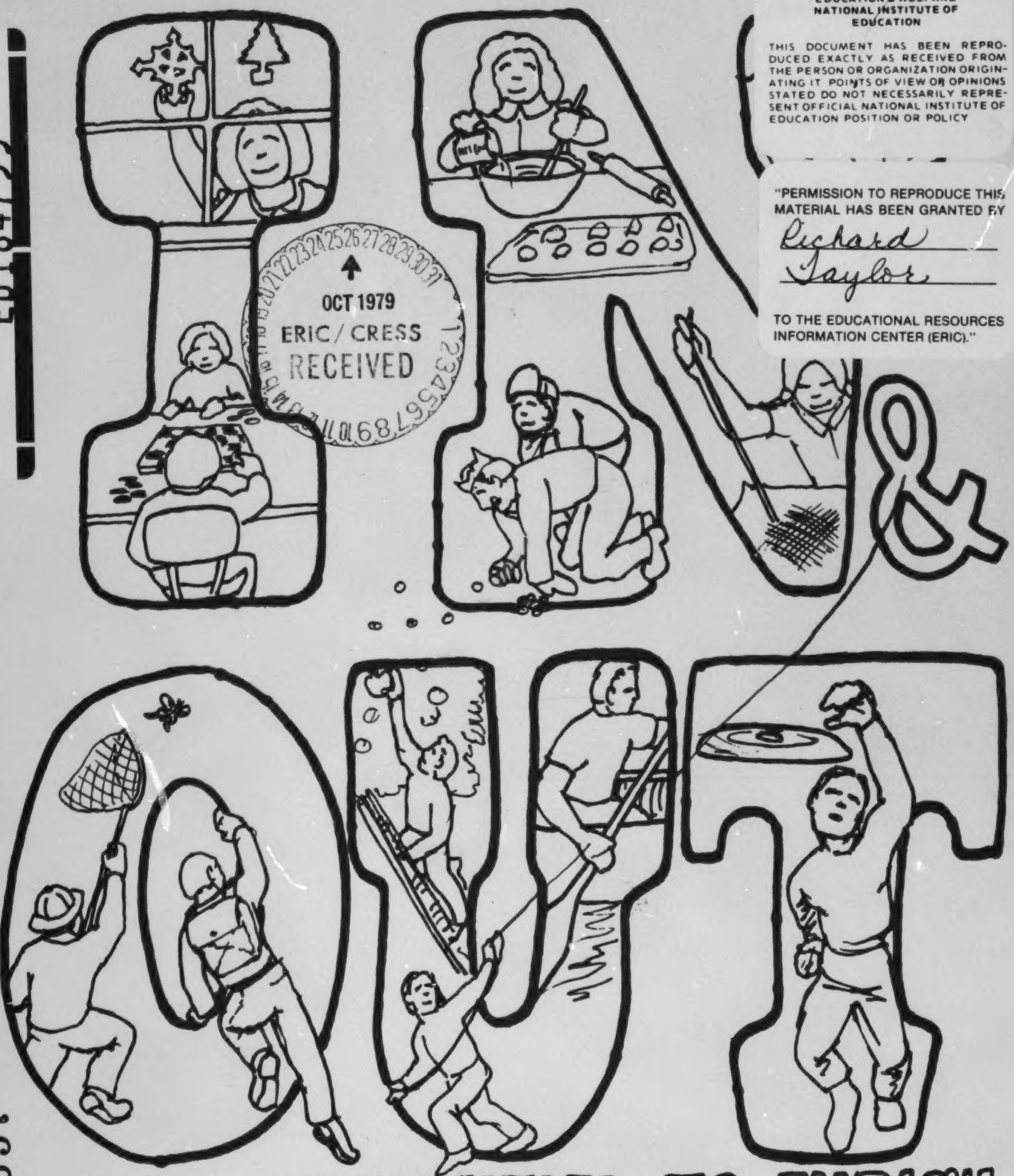

101 ACTIVITIES TO ENRICH THE LEARNING EXPERIENCE

RC011657

PREFACE

For a number of years, the staff of Edwin Gould Outdoor Education Centers, in conjunction with the staff of Green Chimneys School and Lakeside School, have developed a variety of activities for use with children and adults who participate in our various program offerings. These activities have been put together in one place so that everyone can take advantage of the enriched learning experiences they afford.

The cooperative effort of all the participants must be recognized. Credit for the preparation of activities goes to staff, interns and workshop participants. Special credit is due Vinnie LaCour for the excellent art work and Kim Paetsch for editing the material. Also to be thanked are, Holly Manoogian and Patti Johnson for the special effort they used in putting our book together. All those involved can take pride in this publication.

As you use these activities, we would appreciate your comments and suggestions. If you have a favorite activity which does not appear here, we hope you will send it along for a future publication. Already work is in progress on our next edition.

Samuel B. Ross, Jr.
President of Edwin Gould
Outdoor Education Centers
August 1979

by
Patricia Johnson and Others

**This is a sample activity sheet that was used in putting this book together.

ACTIVITY SHEET

NAME OF ACTIVITY____

1. Description of activity:

2. Objectives: What skills are required? What skills will be learned?

3. Supervision and help: Be specific as to the amount of help which is required to carry out this activity.

4. Procedure - How: Please be as specific as possible. Assume the person who will be attempting this activity has no background at all. List primary skills and desired skills required of the person.

5. Where and When: Indicate how much time and the size of the area required.

6. Materials: List resources, references and related knowledge as well.

7. Suggestions and Comments: Indicate other curriculum uses of the activity. Indicate other ways the same activity can be carried forth.

8. Suggested student level: Indicate if the activity is very complicated, easy to carry out or very simple. Think about the activity from a levels approach - great deal of help or supervision to none at all.

9. Observation and evaluation: What are things to watch out for? How do you determine if it was a success or not? Who should perform this task if other than person conducting activity?

EDWIN GOULD OUTDOOR EDUCATION CENTERS, INC.

Edwin Gould Outdoor Education Centers is a private, non-profit educational organization whose primary goals are to meet the educational needs of children and adults, and to contribute to improved human relationships. These goals are achieved by providing high quality porgrams in the out-of-doors.

"In 1924, long before such words as 'environmentalist' and 'institutionalization' became part of our everyday conversation, Edwin Gould said:

> 'In the effort to develop individuality in the child and avoid the so-called institutional type of body, mind, and spirit, it is necessary to find some point of contact and start voluntary thinking and self-expression in the child. This has been found to be most effectively done through contact with nature and curiosity with the common things - animals, birds, insects, flowers, stones, the clouds, the sun, moon and stars and the earth itself.'"*

Edwin Gould Outdoor Education Centers is the Edwin Gould Foundation's response to this observation by Mr. Gould. Lakeside Outdoor Education Center, a day-visit Center in Spring Valley, NY, was initially established as the Lakeside School Nature Center in 1965 by the Foundation. Hillside Outdoor Education Center in Brewster, NY, was founded in 1972 as both a day-visit and resident Center. Green Chimneys Farm Center, also in Brewster and one mile from Hillside, joined the other Centers in 1974. It provides day-visits in outdoor education programs evolving around the farm. Urban Adventures is an Experiential/Environmental Education program beginning July 1979, and based in New York City.

Edwin Gould Outdoor Education Centers thus provide a unique approach to implementing the total concept of outdoor education. Through these four Centers, extensive opportunities are available to participate in school-site, community, and residential outdoor education experiences.

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*From Edwin Gould Foundation for Children 5 Year Report 1973-1977.

IN AND OUT

101 ACTIVITIES TO ENRICH THE LEARNING EXPERIENCE

ACTIVITY NUMBER

OUTDOOR ACADEMICS

Compass Activities -- Don't Get Lost 1
Compass Geometry 2
Here Lies. 3
How To Keep Warm In Winter 4
Learn Basics 5
Mapping and Map Symbol Practice. 6
Oh Say Can You See 7
Reading. 8
Snow Science 9
Stalking The Wild Poem 10
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The Eastern Woodland Indian. 12
The Wooded Age 13
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ACTIVITY NUMBER

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Pirate Treasure Hunt. 98
Predator/Prey Game. 99
Trash Can Scoop Ball. 100
Winter Games - Snow Snake 101

"Before I can learn what I want to know,
I have to experience
Enough so that I can learn."

DON'T GET LOST!!! 1

Compasses are used in two main catagories - for reading and traveling along a map and when making a map. It prevents you from going in circles when lost and is a valuable instrument when hiking. For example: if you are blindfolded in a field and told to walk towards a distant object, you will tend to go in a circle. The reason is - one side pushes harder than the other. This is a good introduction to the reasons for a compass.

OBJECTIVES:

To show proficiency in using a compass.
To perform set skills in a designated time.
To locate markers in an unfamiliar setting.

MATERIALS:

Compasses
Maps of the area
Blindfolds
Markers in the woods at certain key locations
3 X 5 inch cards with instructions on how to get to the markers by compass.

PREPARATION:

Design a compass course with a common meeting place. On an index card, write out the distances travelled and the angles involved on the route. Check the course by yourself with a compass. Make a detailed map of the area and keep a few copies.

PROCEDURE:

1. Discuss the compass and its history.
2. Show there are 360 degrees in a circle.
3. Orient everyone to the directions N,E,W,S.
4. Using the compass, have everyone walk in a square or rectangle and see if they end where they began. Check for confusion. Directions for shapes are included in the activity - Compass Geometry.
5. Hand out course directions.
6. Assistants should follow for safety, but not be directly involved.
7. Have a common meeting place, easy to locate by compass from markers.

RESOURCES:

24 Hour Experience - Larry Buell, Springfield College Freshman Comp.

A beginner's compass game is available for $1.00 from

Silva Company
P.O.Box 547
La Porte, Indiana 46350

COMPASS GEOMETRY 2

Once your students have learned the basic compass skills, you can create numerous activities to reinforce them, including concepts in math.

OBJECTIVES:

To show proficiency in using a compass.
To perform set skills.
To apply previously learned math skills.

MATERIALS:

Liquid filled compass
Pencil and 4 X 6 filing cards
Various measuring devices -
    yard sticks
    meter sticks

PREPARATION:

List on several filing cards the bearings needed to complete various geometric shapes.

PROCEDURES:

1. Have your students follow their directions using a compass. Identify the shape (rectangle, square, etc.).

   EXAMPLE:

   a. Mark the spot you start from.
   b. Take a bearing of 90 degrees and measure off 10 meters. Mark this spot.
   c. Take a bearing of 180 degrees and measure off 10 meters. Mark this spot.
   d. Take a bearing of 270 degrees and measure off 10 meters. Mark this spot.
   e. Take a bearing of 360 degrees and measure off 10 meters. Mark this spot.
   f. What geometric shape did you form? Hopefully, a square.

2. Some other shapes. . .

   1. 5 degrees for 10 meters
   2. 95 degrees for 20 meters
   3. 185 degrees for 10 meters   RECTANGLE
   4. 275 degrees for 20 meters

   1. 30 degrees for 5 meters
   2. 150 degrees for 5 meters   EQUILATERAL TRIANGLE
   3. 270 degrees for 5 meters

More complex shapes can be laid out by simply making a large drawing of the shape on an 8½ X 11 sheet of graph paper.

Orient the paper so that the top is toward north. Without turning the paper, use a compass to determine the bearings needed to form each angle of the shape. Any scale can be used for determining the size of the object to be constructed (perhaps 1" : 12' would be suitable).

This activity will reinforce the use of the compass, recognition of geometric shapes and measurement using English and metric units.

RELATED ACTIVITIES:

Use string and tent pegs to mark out shape being made.
Have capable students make up cards for others to follow.
Have a scavenger hunt based on compass reading and measuring.
Using the same approach as above, spell out words rather than making shapes.

RESOURCES:

BE EXPERT WITH MAP AND COMPASS, Bjorn Kjellstrom, Charles Scribner's Sons, NY, 1955.

YOUR WAY WITH MAP AND COMPASS ORIENTEERING, John Disley, Canadian Orienteering Service, 446 McNicoll Ave., Willowdale, Ontario, 1973 (student and instructor books).

HERE LIES . . . 3

Did you ever wonder why there are fences around cemeteries? People are just dying to get in!!! Seriously though, the cemetery provides an interesting area in which to learn. Words, genealogy, epitaphs, script, designs, dates, customs, and past history can all be explored.

OBJECTIVES:

To produce an art form.
To utilize arithmetic and tabulating skills.
To increase awareness of past-times.

MATERIALS:

Plain newsprint
Jumbo crayons - stripped of paper covering -- a handful of soil can be used in place of crayons.
Masking tape or a set of parteners

PROCEDURE:

1. Obtain permission from owners to explore and do rubbings.

2. Select a gravestone. Place newsprint over writing on stone. Overlay the edges. Use tape or parteners to hold paper in place.

3. Hold crayon flat against paper and rub horizontally and vertically exerting enough pressure for design/writing to come through.

4. Rub out to edges of gravestone. Make sure no crayon marks are made on stones (If soil is used as a crayon, it will wash off in the rain, crayons will not.)

5. Border can be made by rubbing crayon around stone's edge.

SOME DISCUSSION QUESTIONS COULD BE:

6. Who was the oldest/youngest buried there? During what period did many people die? What names/words were common then? What do they mean? What is a Footstone/Headstone?

RELATED ACTIVITIES:

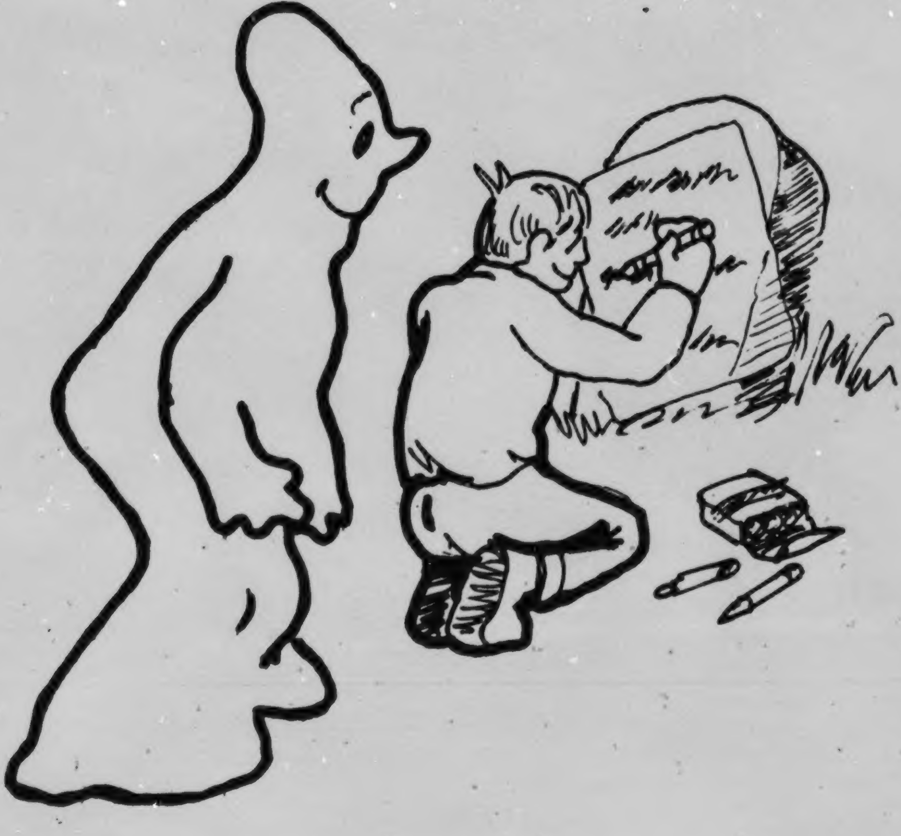
Trace the history of the person whose stone you rubbed.
Write your own epitaph.
Surnames - relation of surnames to occupation, ethnic origin.
Make up and use a chart for recording names and dates.
Talk about superstitions, weathering of stones.
Construct your own family tree.
Carve soap or wood.
Rubbings can be made elsewhere to study history - - i.e. inscriptions on buildings, manhole covers, license plates.

RESOURCES:

TIPS AND TRICKS IN OUTDOOR EDUCATION, ed. Malcolm D. Swan, Interstate Printers and Publishers, Inc., Danville, Ill., 1970

THE CEMETERY: AN OUTDOOR EDUCATION UNIT, Cortland/Madison BOCES Outdoor Budcation Program, 1975

THE CEMETERY, Crystal L. Kofke, Putnam/Northern Westchester BOCES.



HOW TO KEEP WARM THIS WINTER

4

OR

"IF YOUR FEET ARE COLD, PUT A HAT ON"

Many people are venturing out into the wilderness in winter for recreation, education and work. Because we rarely venture forth past the proximity of "civilization" (ie. warm buildings, food, restaurants, and the comforts we have become use to), the knowledge and skill that we once had about surviving in the winter wilderness is all but gone. Before we go out again, we should learn the whys and hows of keeping warm - to avoid any unnecessary discomfort - and what to do in case we cannot avoid it.

OBJECTIVES:

To increase awareness in proper attire for winter.
To experience how you should be dressed.

MATERIALS:

Wool socks
Boots
Long underwear
Shirts
Sweaters
Windbreaker
Parka
Wool pants
Gaiters
Wool mittens & nylon shell
Wool hat

PROCEDURE:

1. Have a fashion show with one model.
2. The model puts on the layers of clothing to show the proper order and layering technique which best provides dead air space around the body. NOTE: For the sake of propriety, it might be advisable to start with a model smaller than the person whose clothes you are using, so that the model can wear a warmup suit or other clothing rather than starting in underwear.

RELATED ACTIVITIES:

Study hypothermia and illnesses concerning the cold.

RESOURCES:

American Red Cross materials and First Aid books.

LEARN BASICS

There are many basic concepts to be found in the out-of-doors. These concepts can lead to a better understanding of nature and humans.

OBJECTIVES:

To understand basics of nature and humans.
To relate oneself to other natural forms.

MATERIALS:

Outdoor area
Paper and pencil for recording

PROCEDURE:

OBSERVE: What is alive, never living, dead, how do the living affect the non living? How do physical (sun, heat, cold, etc.) things affect both living and non living. How do natural forms affect human forms? How do human forms affect natural forms?

FIND: Examples of affects of wind/rain/snow/sun/shade/freezing/crowding. How do living adapt? (fur, clothing, dwelling) What happens to non living?

Remember to record and tie in all findings.

RELATED ACTIVITIES:

Stratification - up - down
Soil studies
What is top layer/middle layer/lower layer?
What levels are nutrients found?
When do plants grow?

SENSES: see, hear, feel, smell - take a blindfolded walk to accentuate senses other than sight.

COLD/HOT: Looked at as potential for solar practice: sun/warm, wind/cool shade/cool. Locate best site for a solar building on school ground based upon heat generated by sun. Develop the building.

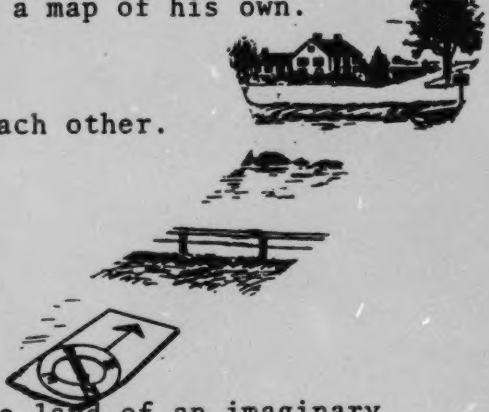
INSTINCT/LEARNED: Memory-behavior; What did we do as infants that was instinctual, learned or reinforced by learning? What are examples of animal instinct.

AESTHETICS: Pleasant, unpleasant; find pleasant and unpleasant areas. Discuss characteristics of both. Improve the unpleasant area.

MAPPING AND SYMBOL PRACTICE

6

This activity will provide the student with the opportunity to learn map symbols and make a map of his own.



OBJECTIVE:

To see how map symbols relate to each other.
To create a map.

MATERIALS:

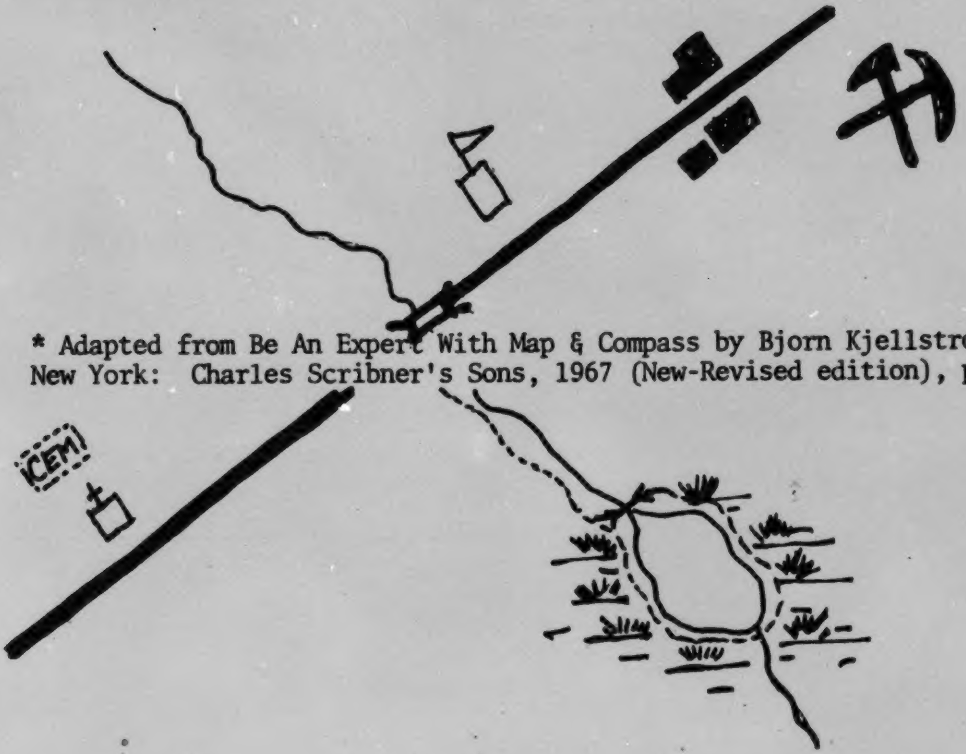
1 piece of paper per player
1 pencil per player

PROCEDURE:

1. Dictate slowly the topography of the land of an imaginary area, such that the players will have to use about a dozen map symbols.

   EXAMPLE:
   a. Draw a "heavy duty" highway from the South-West corner of your paper to the North-East corner.
   b. Locate a spring at the North-West corner.
   c. Make a stream flow down from this spring to the middle of the paper where it meets the road.
   d. Place a bridge on the road over the stream.
   e. The stream should then continue on the other side of the bridge and should finally flow into a small lake at the South-East corner of the paper.
   f. Around the edge of the lake is swampy.
   g. Place an open quarry on the East side of the road near the North-East corner.
   h. Locate a school on the West side of the road just above the bridge.
   i. Place a church on the West side of the road just below the bridge.
   j. Locate the cemetery behind the church.
   k. Place two business buildings just North of the school opposite to each other (one on either side of the road and two on the East side of the road).
   l. Make a foot trail follow along the stream from the bridge down to the edge of the marsh area and around the lake.
   m. Be sure to place a footbridge across the stream just before the marsh.

2. When the maps are completed, the players act as judges of each others' maps. Vote on the best.



* Adapted from Be An Expert With Map & Compass by Bjorn Kjellstrom, New York: Charles Scribner's Sons, 1967 (New-Revised edition), p. 24.

OH SAY CAN YOU SEE

7

Take a visual literacy walk through the woods with a group of students. This activity is best designed for children up to 10 years of age.

OBJECTIVES:

To practice learning how to count.
To distinguish colors and shapes of different leaves.

MATERIALS:

Paper bags

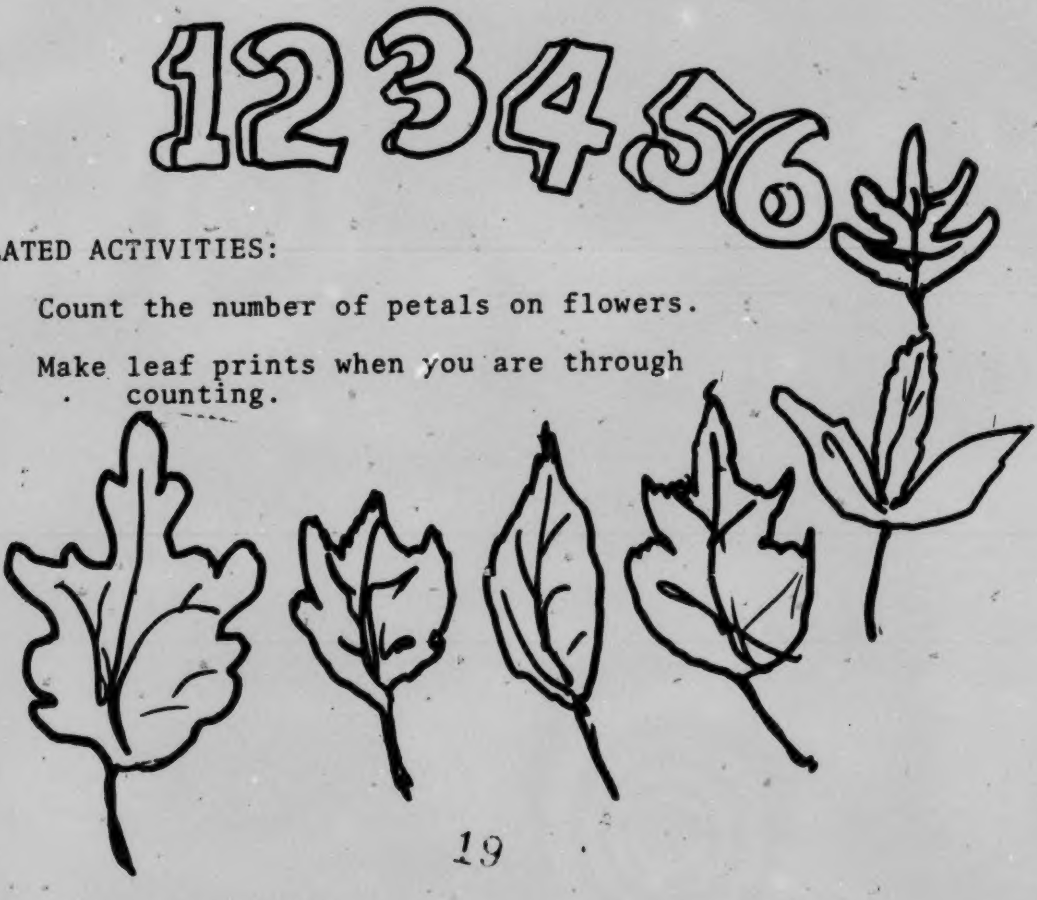
PROCEDURE:

1. Walk through woods looking for freshly fallen leaves. (Do not pick the leaves off the trees.)
2. Have the children gather leaves selectively and put them into individual bags.
3. Return to the classroom.
4. Count all the leaves for a total.
5. Classify them by shapes and then by color.

RELATED ACTIVITIES:

Count the number of petals on flowers.

Make leaf prints when you are through counting.



READING

8

Have you ever thought of reading the outdoors? Here is a simple activity that makes reading fun and exciting.

OBJECTIVES:

To match up vocabulary word cards with the actual objects outdoors.
To foster vocabularly development.

MATERIALS:

Word cards (made in advance by the teacher with a selected vocabulary of: tree, grass, flower, leaf, rock, plant, stick, etc.)

PROCEDURE:

1. Give each student a word card (ie. tree) and have the child "hop" to the object written on the card.
2. Modification - different physical motions can be done for each work card.

RELATED ACTIVITIES:

Cards can be made to correlate to indoor objects or places.

Draw pictures on the cards and play match game or concentration.

SNOW SCIENCE

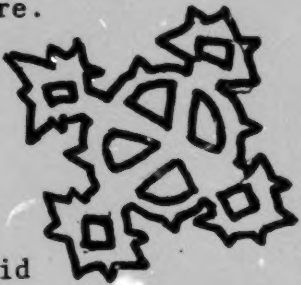
9

"Snow and ice have great ecological significance. Many animals and plants will survive winter only when there is deep snow. Soil doesn't freeze as deeply when there is a heavy snow cover as when there isn't. Snow saves up a good portion of a winter's water supply and releases it in the spring."

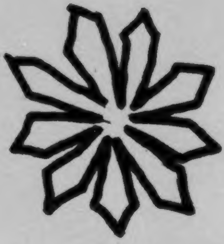
OBJECTIVES:

To investigate the importance of snow.
To demonstrate the basics of nature.

MATERIALS:



White paper
Scissors
Hand lens
Snow guage/ruler
Thermometer
Small containers/coffee can and lid
Candle
Matches
Salt
Pencil
Measuring cup



PROCEDURE:

It's Snowing Outside:

1. How does snow happen? What does a snowflake really look like.
2. Snow flakes are six-sided, let's make a snowflake hexagon.
3. Catch some snowflakes outside. Look at them through a hand lens.
4. Make a snow guage. How much snow falls in an hour? If it snows for three hours how much snow will we get?
5. Measure the temperature of the air while it snows. Lay a thermometer on the ground, let it be buried by snow and read the temperature. Lay a thermometer on top of the snow. Read the temperature. Are there differences? Why or why not?
6. Snow is an insulator. It keeps the ground from freezing too deeply. It helps hibernating animals. Build a snow cave. Put a lighted candle in the snow cave.

It's Freezing Outside:

1. How cold does it have to be to freeze water? Set small amounts of water outside on days that feel cold. Is it really freezing?
2. Why do people have refrigerators? How cold is it in the freezer? Are all freezers the same temperature? How cold is it in the refrigerator? How did people keep things cold before we had electricity?
3. Freeze a coffee can full of water with a plastic lid on top. Find out how a big body of water such as a lake freezes. Why do we see and hear cracks? What happens to the fish and the other animals?
4. How do icicles happen? Watch a candle drip or dip your own.

5. Using a balance compare an equal weight of snow and ice.
6. Some living things cannot live if they are frozen; but, many seeds in our own climate cannot live unless they are frozen. Look at some buds. Are trees dead or alive in the winter? Bring some twigs inside, put them in water, see if they will open inside.
7. Where do all the insects go in the freezing weather? Try to find some cocoons, galls, or eggcases.

It's Melting:

1. When it snows, the snow plow puts sand or salt on the streets. How does this melt the snow? Try some road grit on your own patch of snow. Ice cream makers use salt to melt the ice. Why? Try making some.
2. Why must people be careful not to use too much salt on their sidewalks? Water a plant with some salted snow for a week.
3. Make a snowball, stick it on the end of a pencil, bring it inside. How long will it take to drip? Why doesn't it drip right away?
4. How many cups of snow will make one cup of water? How much water will there be when the snow in your school yard melts?
5. Where does snow go when it melts? Slosh around the school yard, make a map to show where the water flows.
6. One large tree can drink up to 300 gallons of water each day. How much is a gallon? Keep track of how much water each person in the classroom uses every day, remember all the ways!!!

RESOURCES:

FIELD GUIDE TO SNOW CRYSTALS, Edward R. LaChapelle, Peterson Series, University of Washington.

TEN MINUTE FIELD TRIPS, Helen Ross Russell, J.G. Ferguson Publishing Co., Chicago.

SNOW & ICE, National Wildlife Federation, 1412 Sixteenth Street, N.W., Washington, D.C. 20036.

A GUIDE TO NATURE IN WINTER, Donald W. Stokes, Little, Brown & Co., Boston.

STALKING THE WILD POEM

In this activity you will be able to help the student deal with poetry as something other than an abstract; something tangible and real, something that the student can literally come to grips with.

OBJECTIVES:

To experience objects by feeling, tasting, smelling, hearing, and seeing them (nouns) as they are and how the student imagines them to be.
To introduce poetry.

PROCEDURE:

1. The teacher will lead the group on a short hike and have the students pick an object, and will then ask them to describe the object.

2. Record their observations.

3. Question the student on his own selection of words and possibly help to refine the perceptions.

4. Pick a second object and describe it in the process of doing something. The student simply records his feelings on the objects and movement in relationship to himself.

EXAMPLE:

The following four poems were written by Derek Kratlian and Richard Cruz following the previously described method for Stalking the Wild Poem:

The tree is bending over
cause maybe he wants to pick something up
or maybe he wants some soda

The building is making a shadow
on the middle roof, right from both sides
we eat in there
and I think it's a good tree
D. Kratlian

The rock it looks nice
in the middle of the field
that's what's nice about it
with the clock on it
working a sun dial
the sun turns and you don't need a clock
it's good you don't have to plug it in
R. Cruz

The horses near the trees
their long tails are swatting at the flies
grazing in the field
all happy
they think about their fillies
they're in the shadow
I'm in the sun

D. Kratlian

The Soccer Field

When it was muddy and rainy
we had cleat marks all over
the field
last year
I felt proud of the team
that was the last game
we ever had
sitting on the bench
the sun hitting me
the butterfly flying across
the field
I feel funny

R. Cruz

The only help given to these children was to question their observations and to arrange the words into line structure and sense.

SOME DISCUSSION QUESTIONS COULD BE:

Why are these called poems?
Are there other types of poetry?

RELATED ACTIVITIES:

Start a personal poem diary or class literary magazine.
Read poems in class.
Use some of the words as a spelling list.
Include poems in the school bulletin or newspaper.

SURVIVAL...SHELTERS

Survival is of the utmost importance to every living thing. Consciously or unconsciously, we deal with survival each and every day of our lives.

OBJECTIVES:

To increase awareness of our basic needs.
To build a shelter.

MATERIALS:

One pencil and one sheet of paper for every 4 students.
A copy of the survival situation sheet for every 4 students.

PROCEDURE:

1. Introduce the concept of survival.
   - all living things need to "survive".
   - the basic needs: food, clothing, and shelter.
   - survival of the fittest.

   a. Divide the students into groups of 4 or 5 people. Pass out the sheet on the survival situation. Read it over with the group. Be sure they understand the activity. They should record their list of items on a blank sheet of paper. Give the groups 10-15 minutes to compile their lists keeping in mind the basic "needs" - food, clothing and shelter.

   SITUATION -

   "You are living in the mountains. You must hike to the nearest village 30 miles away. It is winter and there is a foot of snow on the ground. You will be out in the snow for two days and two nights. During the day the temperature is 20 degrees Farenheit and at night it drops 5 degrees. What will you wear? What will you carry in your backpack? You cannot carry more than 30 pounds of equipment because you will have an additional 20 pounds of supplies to carry back from the village."

   b. Have a member of each group read out loud the list. Write all items on a blackboard or paper for all to see. After all lists are given, see if the combined list:

   -covers all the basic needs
   -has any unnecessary items
   -is missing items

   Let the students decide. You will serve as the coordinator.

2. Shelter Construction
   Following the preceeding activity, tell the students they are

going to be faced with the task of making their own shelters to test their "survival skills". This will be a group test to construct the best shelter they can from available materials. Set limits on what materials may be used, for example: "Use only what natural items you can find that are dead and are lying on the ground." If there are no branches, etc. available, you can have the students use snow. The students can work in groups of 4 or 5 as in the previous activity or you can combine two groups together. Give the groups 15-45 minutes depending upon available materials, etc. The task is as follows:

"You are lost and must spend the night here. Construct the best shelter you can from the available materials. You may use. . .(set your limits for the students). Remember your shelter should keep you dry and as warm as possible. Use your heads and make use of any permanent objects you can in building the shelter. The shelter must be large enough to accommodate all of your group."

Let the groups go to work. When most groups are finished, call a halt to construction. The entire class then visits each shelter one-by-one. One person from the group that built the shelter explains why they chose the site and why it is a good shelter. At this point the group is asked to offer constructive criticism. When all shelters have been evaluated, the following will probably be answered. (if not, ask the group);

1. What kinds of available materials make the best insulation?
2. How did you plan for wind, rain, snow, etc.?
3. How does size affect the efficiency of your shelter?
4. What natural objects (trees, rocks, holes, etc.) were used to best advantage?
5. How could you improve your shelter?

RELATED ACTIVITIES:

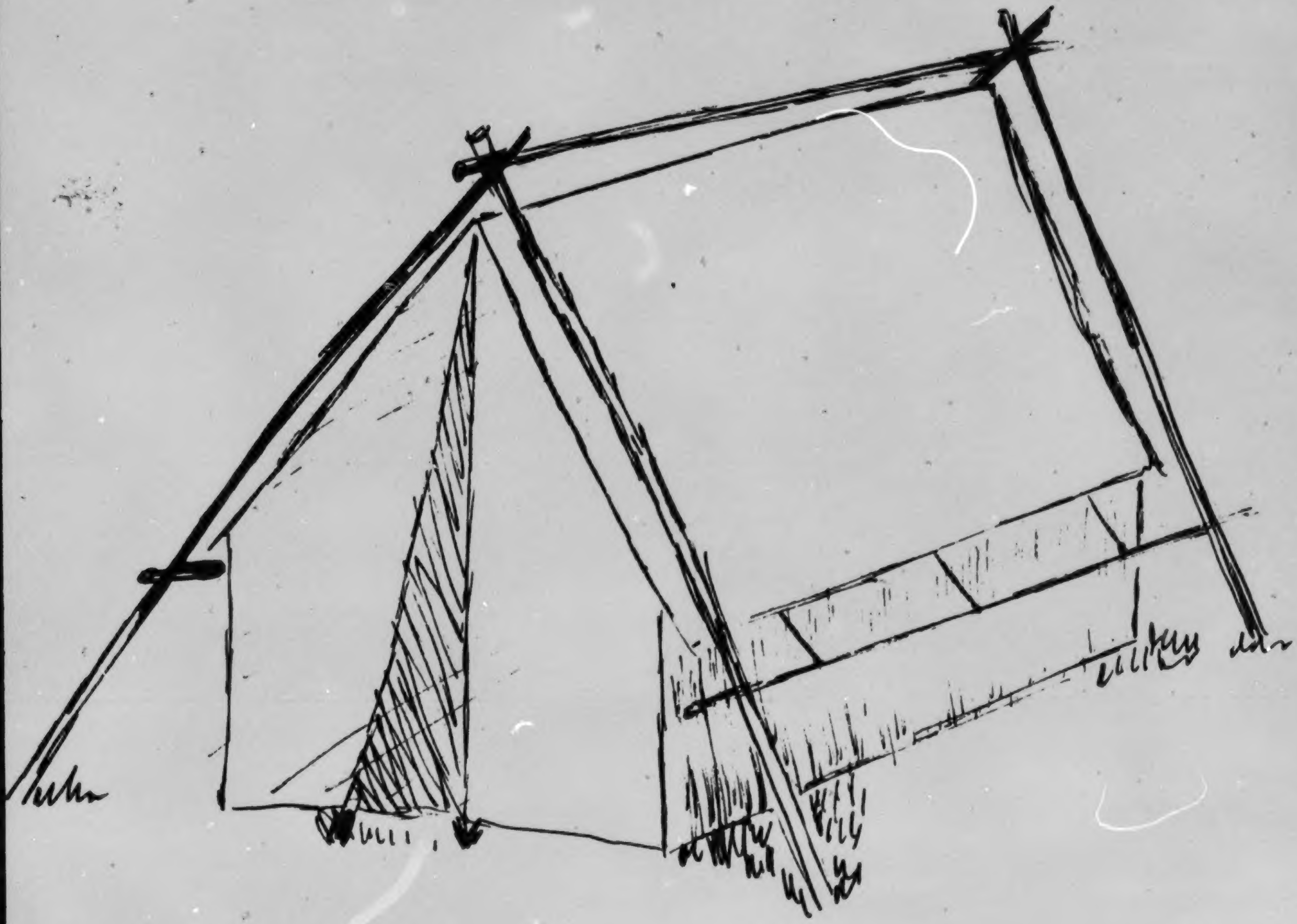
Study miniclimates and wind chill effects.
Learn other "survival skills":
    -firebuilding and cooking
    -map and compass work
    -proper winter clothing/summer clothing
    -make survival kits
    -study hypothermia/heatstroke/heat exhaustion/etc.
    -learn about edible wild plants, cook a meal.
    -study animal survival. Track an animal in winter or study the insects in winter
    -take a survival hike to look for signs of how plants or animals adapt.
Study the group dynamics of the two activities. Discuss how the group made decisions; who became the leaders and followers and why.

RESOURCES:

BUSHCRAFT, Richard Graves, Schocken Books, New York 1972.

OUTDOOR SURVIVAL SKILLS, Larry Dean Olsen, Brigham Young University Press, Provo, Utah, 1976.

FIELDBOOK, Boy Scouts of America, New Brunswick, New Jersey 1967.



THE EASTERN WOODLAND INDIAN **12**

The first Homo sapiens in this region were more in touch with the land than us. Their food, shelter, tools, and games were all created from renewable resources from the surrounding forest. While archaeology is fun and valuable, duplicating facets of native American lifestyle clues students into ways that they may live harmoniously with their environment.

OBJECTIVE:

To introduce aspects of the native American culture.

MATERIALS:

Young woodland or fencerow of trees.
Hands and a brain

PROCEDURE:

1. Use of hardwood saplings for shelter construction (comparing physical qualities of various sizes and types of wood) - especially maple, hickory, and ash. Bend and lash saplings and use a bark substitute such as tree-wrap or burlap for covering.

2. Making useful items out of bark: mainly basswood (Tilia) and elm. Students should experiment with various natural materials to tune in to the Indians' Classroom.

3. Native foods. Depending on time and weather:
   - -Teas (sassafras, spicebush, birch)
   - -Nuts (black walnuts, chestnuts, hickories, acorns)
   - -Various kinds of corn. Student may make or use a samp mill to grind corn. (Firewood-sized piece of oak or maple suspended from a springy sapling. Corn held in dished out stump.)
   - -Maple sugar: How did Indians boil with out metal containers?
   - -Students can make spiles from sumac.

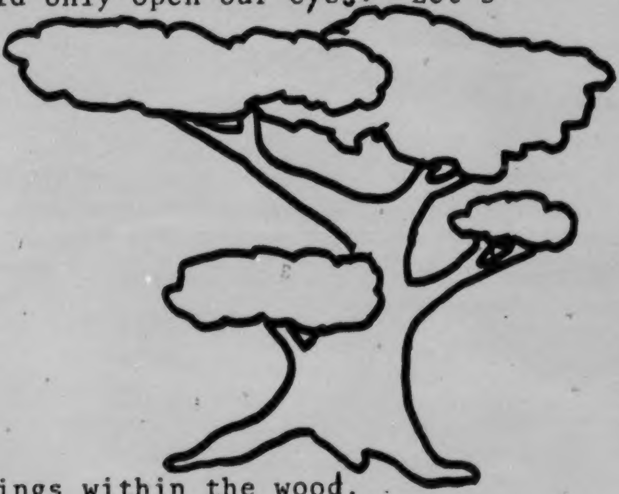
4. Firebows and other tools (Irquois pump drills, bone, antler and stone tools).

RESOURCES:

THE INDIANS OF NEW JERSEY or DIKON AMONG THE LENAPE. This narrative follows a group of Delaware Indians, whose lifestyle was very similar to local Indians, through a year with good activity descriptions.

THE WOODED AGE

The tree is a marvelous thing. There are so many things we can learn from trees if we would only open our eyes. Let's go exploring!!!



OBJECTIVE:

To familiarize the student with how trees grow and their structure.

MATERIALS:

Sawed logs (6")

PROCEDURE:

1. Pass out chopped wood.
2. Have the students count the rings within the wood.
3. Have the students peel back top layer of bark.
4. DISCUSS:

How can you tell the age of the tree the wood came from?

Will a branch taken from the same tree indicate the same number of rings?

Does the weather affect the thickness of the layers of bark?

Point out knots in the wood. How does a tree repair itself?

Discuss carving of initials in the wood. Does this hurt the wood?

RELATED ACTIVITIES:

Hike through a state forest that offers a selection of both young and old trees.
Use in conjunction with "Building a Tree".

RESOURCES:

Write: U.S. Forest Service.

A REVERENCE FOR WOOD, Eric Sloane, NY, Ballentine, 1965.

WHAT NATURE TELLS ME, ABOUT ME **14**

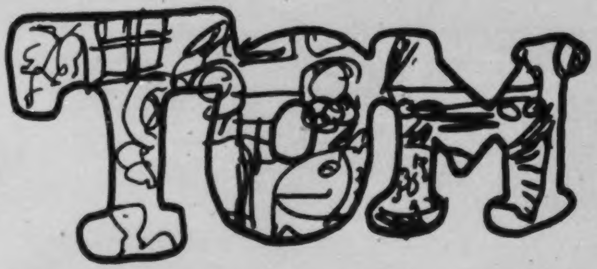
Seeing ourselves as related to all that lives can give us a better perspective on our lives and help us to feel more comfortable in the world in which we live.

OBJECTIVES:

To demonstrate categorization.
To be used as part of an affective training program.

MATERIALS:

Pencils and posterboard
Letter stencils
Crayons
Scissors
Nature Magazines
Paste



PROCEDURE:

1. Make a name card on the poster board, using letter stencils.
2. Look through the magazines and find animals and parts of nature which have a special meaning to you.
3. Paste the pictures or words around your name to make a plate which tells about you.
4. Post it on your bedroom door, desk or bulletin board.
5. Discuss what the pictures tell about themselves and their personality. and how are the pictures related to each other?

RELATED ACTIVITIES:

Take a walk to discover more about nature and seasonal changes.

Compare the name plates and describe how people are different and how they express themselves.

ABC SCAVENGER HUNT 15

We all spend time out of doors. How observant are you? Can you discover and collect one object for each letter of the alphabet?

OBJECTIVES:

To increase your sense of awareness.
To discover the many things in our out-door environment.

MATERIALS:

Writing boards, pencils and paper
A small lunch size paper bag

PROCEDURE:

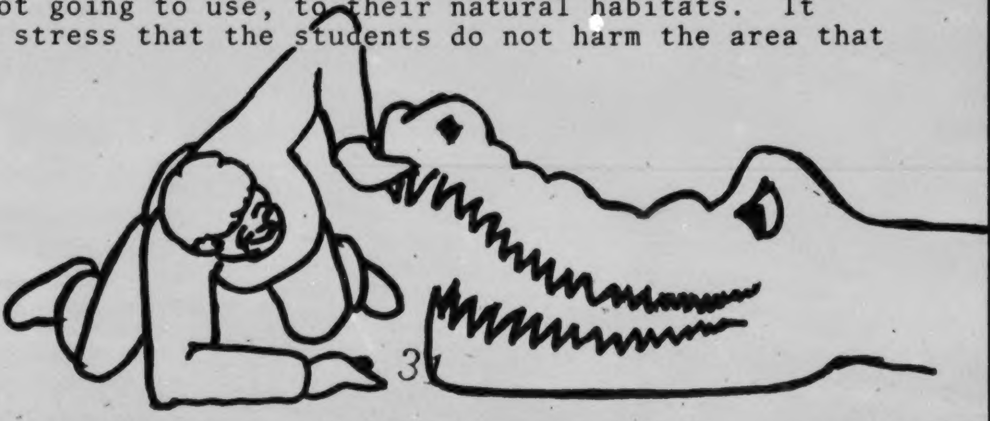
1. Divide into groups.
2. Each group writes the alphabet in column form on their paper.
3. Find something that starts with each letter of the alphabet that fits in the bag and write it down.
4. Each object can only be used once.
5. Give the appropriate boundaries.
6. After the time limit is up (about 45 minutes) each group lines up their objects alphabetically for the judges to check.
7. To make the game a little harder, you can be specific and say all objects must be nouns; adjectives; something that was once alive; something that was never alive.

RELATED ACTIVITIES:

Make a collage of the collection.

Specifically identify items using available references like Golden Guides or Field Guides.

Please remember to have the students return all their materials, that they are not going to use, to their natural habitats. It is important to stress that the students do not harm the area that they are using.



ANIMALS IN WINTER

Winter may be the best time to study animals such as mammals. The woods and meadows are not so "cluttered" with a furor of plant activity. The visual landscape is simplified and even more abstract so that natural science concepts may be more easily understood.

OBJECTIVES:

To discover adaptations of animals.
To introduce natural science concepts.

MATERIALS:

Mousetrap - spring type
Hardware cloth
Pliers
Wire
2 nuts, 2 matching bolts
Empty can
Punch and hammer
Drill
Tin snips (wire cutters)

PROCEDURE:

1. Students will walk with a teacher/naturalist through several habitats. The educational value of various discoveries of the group should be discussed. Interpreting animal signs, the importance of shelter and insulation, microclimates, physical properties of water (in relation to animals) should be stressed.

2. Inexpensive or readily available equipment to aid animal study should be demonstrated. The best reference works can be used.

3. Experiment with materials that demonstrate natural insulation.

4. Follow tracks. Interpret the movement techniques and look for clues of what the critter was doing.

5. Use live traps for population studies. For construction of a trap:
   a. cut a piece of hardware cloth slightly larger than the can opening.
   b. punch two holes in the side of the can 3 cm. apart and 3 cm from the opening. Drill matching holes in the trap.
   c. twist four pieces of wire to fasten hardware cloth to action bar of the trap.
   d. bolt the trap to the can. Use pliers to bend edges of the can (this is to prevent animal from pushing out).
   e. bait trigger with peanut butter. Seeds and/or fruit trees are also acceptable.
   f. in fall, winter, and spring, place shredded bark (e.g.

cedar), fine hay, dry dead grass, or cotton or other insulation in the back of the can. This minimizes the danger of the animal freezing.

g. take a bright marker (like orange platic or yarn) to place in a tree or bush above the trap so that it may be located easily. Good places for the trap include: stone fences, next to hollow trees, rock formations, near stream banks, edges of fields.

h. compare results from different habitats.

i. it is preferable to check a trap at the first opportunity in the morning if it has been left out at night. In no case should a trap be left unchecked more than 24 hrs.

RESOURCES:

A GUIDE TO NATURE IN WINTER, Donald W. Stokes, Little, Brown & Co., Boston.

A FIELD GUIDE TO ANIMAL TRACKS, Olans Nurie, Houghton Mifflin Co., Boston.

AMERICAN WILDLIFE AND PLANTS: A GUIDE TO WILDLIFE FOOD HABITATS, Alexander Martin, Dover Publications, NY,

Since Havahart Corporation (construction of live traps) is located in Ossining, local teachers may want to arrange a trip to observe their manufacturing process.

A WALK ANYONE?

Basic language concepts and body awareness can be introduced inconspicuously on a walk.

OBJECTIVES:

To increase balance, coordination, body and spatial awareness.
To gain control of body mavements.

MATERIALS:

A trail in the woods.

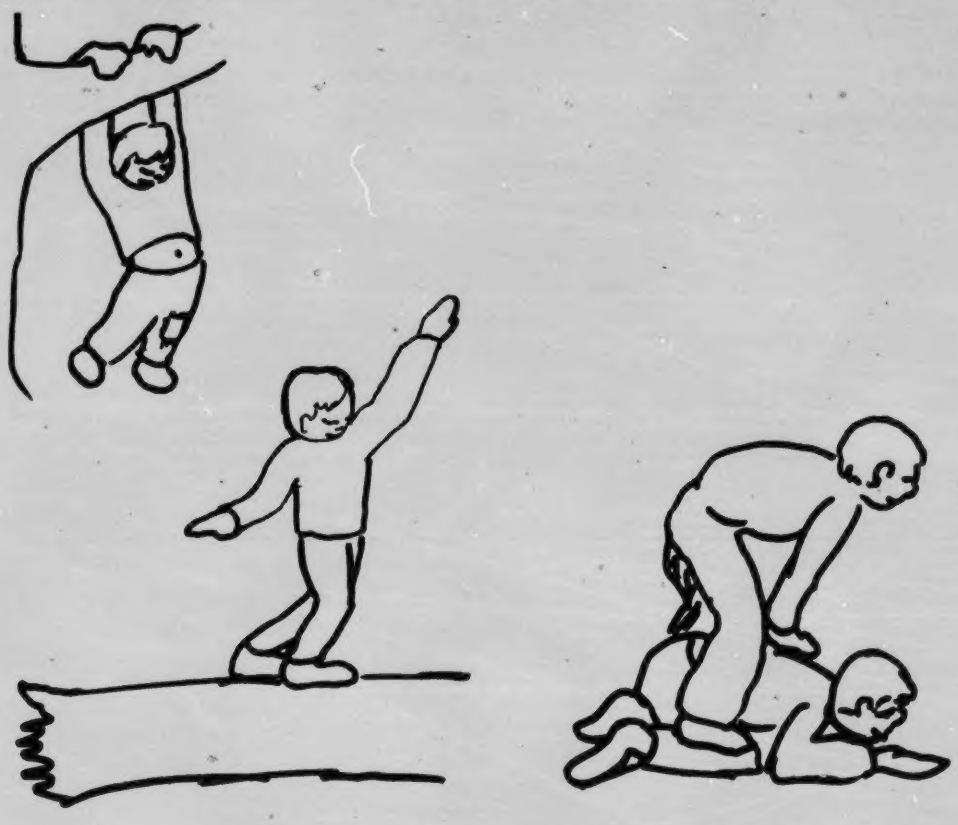
PROCEDURE:

1. Walk through the woods on a designated path (narrow).
2. Walk over logs, down the lengths of logs, over rocks, swinging on low limbs, crawling under things - Natural Obstacle Course!!!

RELATED ACTIVITIES:

Identify rocks, trees, plants, etc.

Have the children: rabbits, frogs, elephants, etc.



CAMOUFLAGE

In nature various creatures are affected by their ability to blend with their surroundings. Creatures are also affected by their visual ability.

OBJECTIVES:

To be able to define how camouflage works.
To illustrate how our sight is different from other animals.

MATERIALS:

Section of woods, garden, or other outdoor area
Paper, crayons, colored markers or paint

PROCEDURE:

1. Take the group outside and look for critters.
2. Discuss: Which were the easiest to find? Hardest? Were critters seen before or after they moved? How do markings and color of animals affect how easily they are seen? How do coloration, shade or sun spot of an area affect how readily they are seen?
3. Back in the classroom, hand out paper and colors - being sure everyone has black, white and grey.
4. Draw the area - woods, field, garden, using colors - try to be accurate. Is it easy or hard to see the critters? How many animals see color?
5. Draw the same picture in tones of grey. How does vision affect the effectiveness of camouflage?

RELATED ACTIVITIES:

Play a game of camouflage. Let the students hide themselves so they blend in with the surroundings.

RESOURCES:

Use field guides and Golden guides.

EGG CARTON EXPLORATION

Higher levels of appreciation of things are insured with more knowledge. This knowledge can be acquired in a variety of ways, but the discovery approach makes lasting impacts. This activity, used in the woods, will give boundaries, and guidelines which help the discovery to begin distinguishing individuality from similarities, differences from familiarities, and also lead one to find many new tinkgs that were never thought to exist. All this newly acquired knowledge will take children to higher levels of appreciation of the forest.

OBJECTIVES:

To find a variety of flora and fauna under headlines of houses, evidnece of animals, rough things, brown things, decomposers, consumers, producers.
To increase vocabulary.
To be able to give expamles of similarities and differences within the topics able.
To be able to classify.

MATERIALS:

1 Egg Carton (1 dozen)/3 children

PROCEDURE:

1. Give each group of three children an egg carton.

2. Within a boundary set by the teachers, the children in each group are to work together finding objects in the woods that meet the criteria of topic headings and that also fit in the egg carton. Headings - rough things, houses, evidence of animals, brown things, decomposers, producers, something once alive, sweet, cold, interesting.

3. Come back and discuss what has been found.

4. Objects that will not be used should be returned to the place they were found.

RELATED ACTIVITIES:

Clarify objects on "touch table" into the same headings.
Make a "touch table" using the objects collected. (A "touch table" is a collection of objects, natural or man-made set on a table which are meant to be touched, picked up, explored, and so forth.)
Try the ABC Scavenger Hunt.

ENERGY CONSERVATION

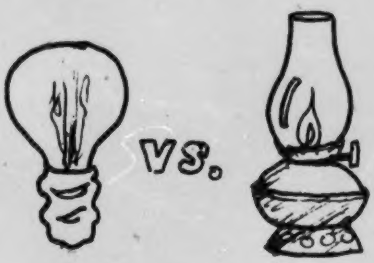
How much energy do you consume daily? How did our forefathers and early settlers manage without the many conveniences we use today? (Find out statistics - average electricity used per household/individual in your area.) Could you live comfortably using less? Would you be willing to give up your washing machine or spend a few less hours watching TV?

OBJECTIVES:

To become aware of how much electrical energy we consume and what alternatives there are.

MATERIALS:

Paper
Pencils
Chalkboard



PROCEDURE:

A. Have each participant:

1. List 13 electrical appliances that you use.
2. Cross out those that are 5 years new.
3. What 3 appliances can't you live without?

B. In a group:

1. List all appliances the group comes up with.
2. Vote on 3 that you decide you can't live without.

DISCUSSION QUESTIONS:

How and why were decisions made?
What does this say about our life styles?
What alternatives can we find or sacrifice?
Are we willing to improve or maintain our environment?
For example, reading or walking vs. TV and driving cars, burning wood, oil, gas etc. - which is best?

RELATED ACTIVITIES:

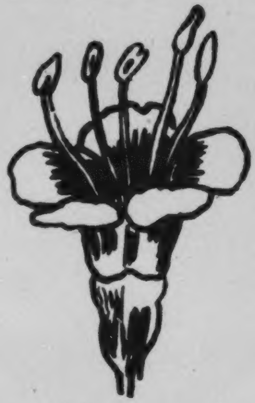
1. Have each participant be an appliance and justify his existence to the group.
2. 5 things that I can do to conserve energy that I have not previously done. ex. insulate furnace pipes.
3. List frivolous things I do and discontinue them. ex. use of an electric can opener.
4. Read off 25 activities that use various amounts of energy. Each participant writes down 1 - I do consistently; 2 - I do ½ the time; 3 - I don't do. Compile the score.
5. How much electricity does each appliance use? Compare kinds and manufacturers.
6. Find and visit sources of electric energy in your area.

FOOD MAKERS - PLANTS AND THEIR STRUCTURE

Where do plants get their sugar from? Green plants need water, air and sunlight to make sugar. The roots take in water from the soil. The water moves up to the stem and leaves where it combines with air and sunlight to produce sugar.

OBJECTIVES:

To identify and relate the structure of a flower to its functions.
To identify the three basic needs of a plant for food production.
To recreate a flower with all its parts.



MATERIALS:

Live flowers or plants
Clay
Seeds, beans, beads, cotton balls, etc.
Pipe cleaners
Drawing paper
Magic markers, crayons

PROCEDURE:

1. Have the children examine a flowering plant to discover the structure.
2. Ask them to identify the stem, leaves, etc. Then have them help you draw it on the board.
3. Have them reproduce a flower they have examined, using clay and other materials.
4. After cleanup, talk about their models and the colors they used.

RELATED ACTIVITIES:

Growing plants and observing their growth from seeds, stem cuttings, bulbs, etc. are activities where the student manipulates materials to gain the feeling of "I have produced this: I am in control."

Further activities might include preparing and eating parts of plants: bean sprouts, stem - celery, roots - carrots, seeds - peas, sunflowers, fruits - apples.

RESOURCES:

LOOK AT A FLOWER, Anne Ophelia T. Dowden, Thomas Y. Crowell, Co., New York, 1963.

FOR THE BIRDS

22

Winter is an excellent time to make close observations of birds at feeders. For the best success in attracting birds, feeders should be filled in October or November. There should be shrubbery nearby for the birds' protection. Feeders should be protected from the prevailing wind. Be sure that once a feeder is extablished, it will be maintained well into March since birds will have become dependent upon you.

OBJECTIVES:

To provide a rewarding and meaningful experience where the student can take pride in making and caring for a bird feeder.

To demonstrate man's positive effect on altering feeding habits of birds.

To stimulate interest in comparing and observing various birds.

To understand the importance of the bird's role in the web of life.

MATERIALS:

Will vary with the project, but essentially -

- Bird seed
- Wooden boards
- Plastic jugs
- Saws, bits and brace
- Logs
- Screw eyes
- Wire
- Nails
- Pine Cones
- Onion bag
- Cardboard

PROCEDURE:

1. Easy Feeders:

Suet Bag - Stuff suet or fat trimmings into a mesh bag (ie. onion bag) and hang from a tree or nail to a post.

Log Suet Feeder - Locate a dead, fairly solid log, about 3" in diameter. Have the students drill 6-8 holes (3/4" in diameter, 1" deep) in each foot long segment. Saw the log into the foot long segments only after the holes have been drilled (this allows for easier handling of the drill, since students are needed to hold the log for the drillers). Press suet into the holes. Suspend the log by a screw eye, or a bent nail in one end through a piece of wire, or nail it horizontally to a post.

Seed Tray - Nail a 2" rim around edge of 12" x 12" x 1" or larger board. Attach the tray to the pole or tree in a sheltered area or on the outside window sill.

Seed Hopper - Use recycled materials such as plastic milk jug or large can with cover. Cut holes on the side at the bottom edge of the jug. Cement the jug to a dish cut from a larger jug or to a foil pan. Tie a string or wire around the top and hang it from a tree. Fill the feeder and cap the jug. This is now an automatic feeder.

Pine Cone Feeder - Dip pine cones into melted suet or bird mush mixture. The temperature of the mix should be warm enough to flow and fill cracks but cool enough so as not to drip all over the floor. Hang the pine cones from tree or clothesline.

2. Bird Feed:

Birds are often specific about types of food they eat, usually depending upon its beak build and habitat. Buy several types of feed (sunflower, cracked corn, millet, buckwheat, peanuts - whole and crushed - do not use slated peanuts). Make a food preference tray by cutting holes into a board and inserting paper cups or small cans. Fill each cup with different seed and observe eating habits and preferences of various birds.

Bird mush recipe to fill log feeder holes: Melt down accumulated grease drippings from kitchn with an equal amount of peanut butter; add bird seed to liquid; let cool and stuff into log feeder or pine cones.

3. Bird Blinds:

If a window sill feeder is used, make a cardboard bird blind for inside that window. Put slots in cardboard so students can pass through and observe "eyeball to eyeball".

4. Bird Clue Chart:

A simple chart can be drawn up for students to record observations. Sample:

SIZE	SHADE	SHAPE	SONG	NAME

5. DISCUSSION:

What are the characteristics and habitats of birds found in the school area.

What is the importance of birds and conservation. (Did you know that a pair of Flickers consider 5,000 ants a mere snack?)

What are signs of aggression or timidity of birds, etc.
Does the size and the shape of a bill relate to food preferance and eating habits? Observe and compare.

RELATED ACTIVITIES:

Construct a bird's nest.
Develop a bird sanctuary in a proper location.

RESOURCES:

THE NEW FIELD BOOK OF NATURE ACTIVITIES AND HOBBIES, William Hillcourt, NY, G.P. Putnam's Sons, 1970.

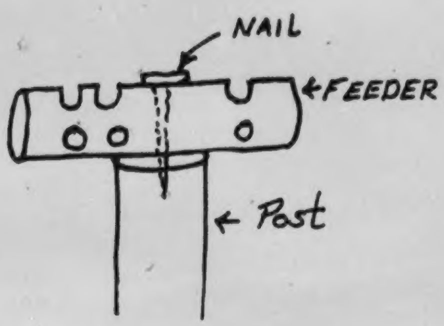
HOW TO KNOW THE BIRDS, Roger Tory Peterson, NY, A Mentor Book, 1949.

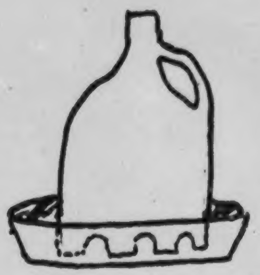
A FIELD GUIDE TO THE BIRDS, Roger Tory Peterson, Boston, Houghton-Mifflin Co., 1947.

FIELDBOOK FOR BOYS AND MEN, Boy Scouts of America, New Brunswick, N.J., 1967.

THE HABITAT GUIDE TO BIRDING, Thomas P. McElroy, Jr., NY, Alfred J. Knopf Inc., 1974.

HANDBOOK OF NATURE STUDY, Anna B. Comstock, Ithaca, Cornell University Press, 1939.




SEED HOPPER

LEARNING MEDLEY

Education can be a pleasurable experience. Through the use of a worksheet, natural and man-made props, the outdoors can become a stimulating learning environment involving touch, smell, taste and most important of all, curious investigation. Although the identification of trees, plants and birds will be stressed, the activities are designed to emphasize the process of learning. The repetition and association facilitates greater preception and increased comprehension of the knowledge. From here reasoning and logical deduction follows.

OBJECTIVES:

To facilitate learning of natural history through the process of repetition and associates reasoning and logical deduction.
To make use of the natural environment as a "classroom".
To increase awareness of the availability of resources in the environment.

MATERIALS:

Paper
Crayons
Thin cardboard
Scissors
Magazines for cutting up
Natural history guide books
Portable tape player and tape
Strips of cloth

ACTIVITIES:

1. Natural History Walk: This involves taking a walk in a forest or wooded area to identify trees, plants or birds according to their shapes, colors, sizes, peculiarities or habitats. Repeated walks will enable you to associate the plants and animals with their habitats, to note differences in growth stages (ie. biennial plants may look quite different in different seasons) and observe seasonal changes (ie. more abundant wildlife in the spring and summer).

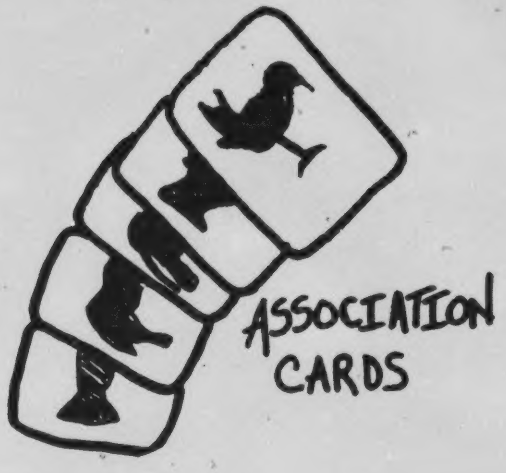
2. Plot Study: Mark off one meter square plot of land in a field or by a roadside. Take samples of a plant dominant in the plot. Take the plant home, dry and press it. Identify the plant with the help of guide books if necessary. Return to the same plot during the next season. Look for and collect the same plant. What are the differences? Could you identify the plant without the aid of a guide book? Had the plant changed during the change in seasons and change in its life cycle? Try to identify the same type of plant in other locations. Soon you will not need the guide book to confirm or reinforce your ability to correctly identify the plant.

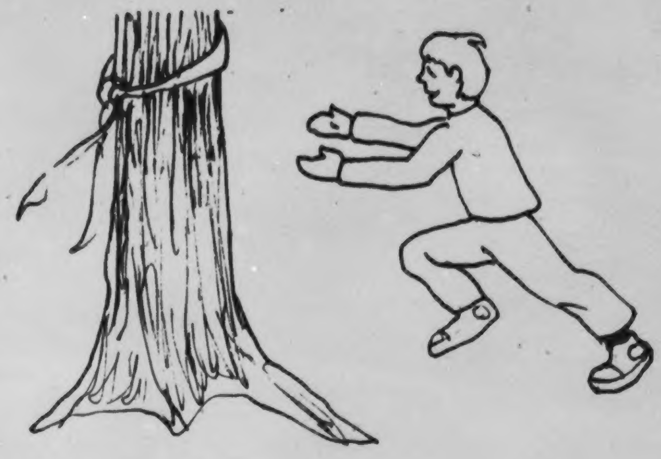
3. Tree Bark Rubbings: Working in pairs, one person holds a piece of white paper against the bark of a tree while the

other person rubs the side of a crayon or a piece of charcoal firmly across the paper to get the imprint of the barks' pattern on it. The two people can take turns doing this. Compare the rubbings of several randomly selected trees. Can the rubbings be catagorized and classified? How are the rubbings the same? How are they different?

4. Association Cards: Make up a set of cards with pictures of animals, birds, trees, or plants. One card of a pair would show the picture of a flower, for example, while the association card might show a picture of a bee or a butterfly. The object of the activity is to learn about the object through its association with the matching objects. For preschoolers the cards can be made into a puzzle with cut-outs to fit together to help with the association task.

5. Musical Trees: This is a game played like musical chairs. In a forested area, three different species of trees should be marked with pieces of cloth. Each tree specie should be marked with the same color cloth. The number of marked trees of each species should be equal to one less than the number of participants in the game. The game begins by having the leader play music on a portable tape player while the participants are told to walk through the stand of marked trees. Then the music is stopped and the leader immediately calls out the name of one of the tree species of trees. (Participants are taught some of the basic identifying characteristics of each of the species of trees before the game begins.) The participants then must run to find and touch the correct tree among the marked trees. The player left withou- a tree is "out". Begin the music again after one tree from each species has had its cloth taken off. Play ends when one player is left.





MUSICAL TREES

RESOURCES:

THE NATURAL HISTORY GUIDE, A. Charles Laun, Alsace Books and Films, Alton, Illinois, 1967.

LEAVES BEFORE THEY LEAVE

Have you ever noticed the color of leaves in autumn? Do they all turn the same color? The animals too. How have they changed? Let's explore the colors of autumn and learn how the forest, plants, and animals are preparing for winter.

OBJECTIVES:

To familiarize and explain the changes that occur during the fall in the forest.
To increase the utilization of senses other than sight.
To develop a sense of trust between partners.

MATERIALS:

Blindfolds

PROCEDURE:

1. Take a hike through a forest or a park. When students take notice of the various colors of the leaves, discuss; Why leaves change color. Do all leaves trun the same color? Are there any changes in weather due to the loss of leaves? Do animals change color? Why?

2. Tell the legend of the Bears Blood and Fat.

3. Divide the group into partners. Have one put on a blindfold while the other carefully takes his partner to an area to explore utilizing all the senses, except sight.

4. Explore a variety of different areas.

5. Have partners switch roles.

RELATED ACTIVITIES:

Hike to the same area during a different season.
Weather experiments, leaf collage, celery and food coloring, leaf prints, chromotography with leaf pigments, ABC Scavenger Hunt using colors.

RESOURCES:

ACCLIMATIZATION, Steve Van Metre, American Camping Association.

ACCLIMATIZING, Steve Van Metre, American Camping Association.

OWL EARS AND SOLAR COLLECTORS 25

"Solar Collectors" and "Owl Ears" are good opening activities to do with children. The children will be able to feel the sun's energy by using their tongue or finger as a solar collector. By adapting their own ears to that of an owl, the children will be able to hear sounds much clearer and louder than with their "people" ears.

OBJECTIVES:

To develop a discussion about the ways that the sun's energy is used in the environment.
To focus attention on adaptations that animals have that people don't (shape, movement, etc.)

PROCEDURE:

1. Solar Collectors:

Begin by having the children form a circle sitting on the ground. Ask them what solar energy is. (Energy from the sun.) Then tell them that we are going to make solar collectors of ourselves. "OK - Everybody face the sun, cover your eyes, and stick out your tongues."

DISCUSS:

Ask the children if they feel heat-energy from the sun. How do things in the environment act as solar collectors? (ie. trees, the ground, etc.) Why is solar energy important to us?

2. Owl Ears:

While the children are still sitting on the ground, tell them, "we are going to use our ears to hear like owls do." Show them by cupping your hands behind your ears and ask them to do the same. Then have everyone stay quiet and listen.

DISCUSS:

Why do we call them owl ears? (parabola shape)
What did everyone hear? Talk about the different sounds when you take you hands away from your ears.
Do owls have ears like these?

RELATED ACTIVITIES:

Discover how a greenhouse works. Visit a greenhouse.
Design and construct a solar reflector, solar collector, or solar still. (Discuss the differences)
Make a list of the ways the group can conserve energy. Put these suggestion to use.

Discuss animal camouflage. Have a group create a beast using various materials and manmade materials so it will be camouflaged in a given habitat.

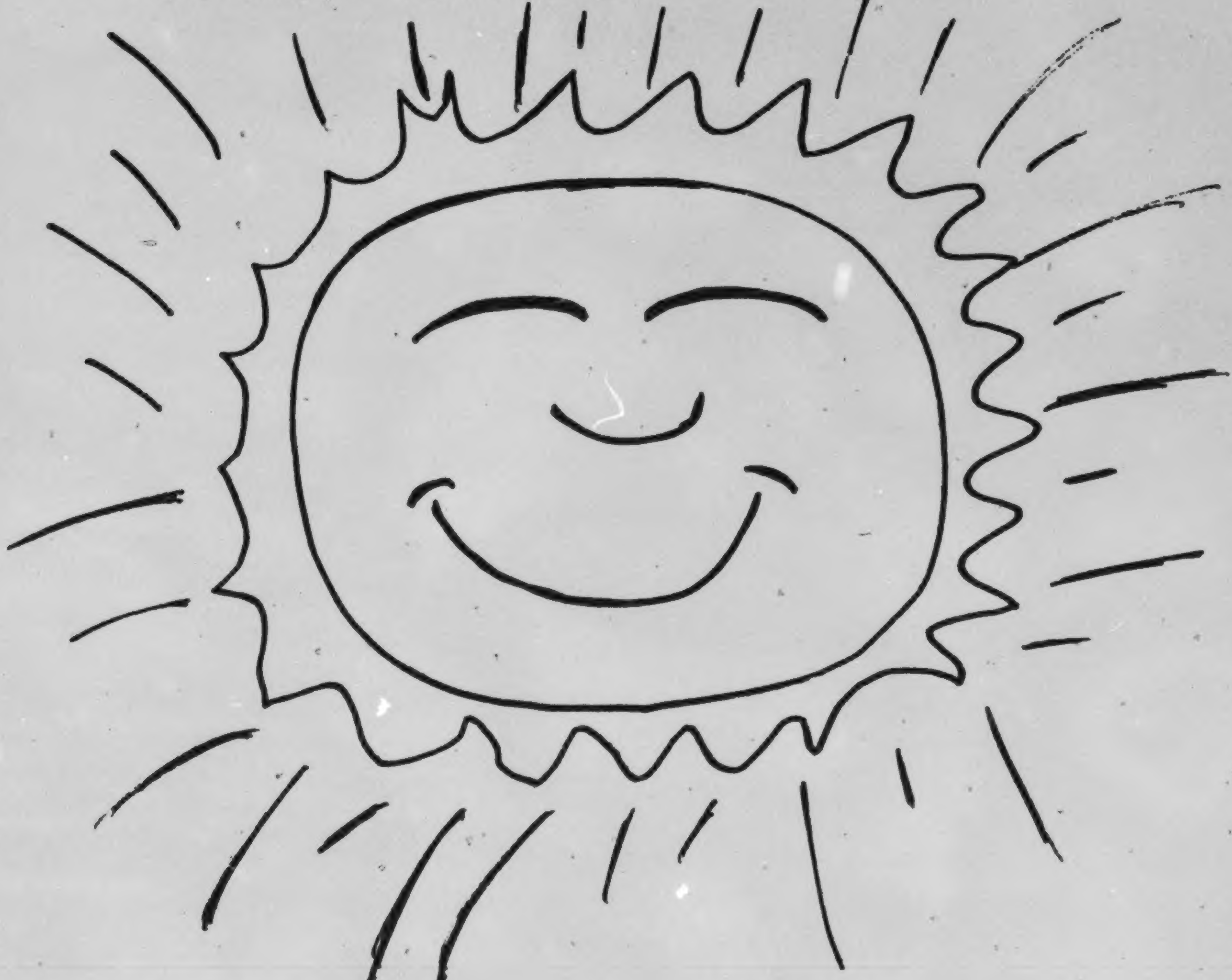
Have the group hide their beast and then search for other beasts. Once all the beasts have been discovered have each group discuss their beasts adaptations and camouflage abilities.

RESOURCES:

OUTDOOR BIOLOGY INSTRUCTIONAL STRATEGIES, (O.B.I.S.) Lawrence Hall of Science, University of California at Berkley. Program used: "Invent an animal adaptation."

DIRECT USE OF SOLAR ENERGY, Farrington Daniels, Ballantine books, NY 1972.

HANDBOOK OF HOMEMADE POWER, Mother Earth News, Bantam Books, Inc., New York 1974. Pg. 249-261.



PLOT STUDIES

100
90
80
70
60

Many times while walking through a forest or field, we never notice what is beneath our feet. This activity will provide the children with the opportunity to look closely at the soild and ground cover.

OBJECTIVES:

To observe and categorize similarities and differences within a given plot.

To examine closely a small plot of land.

MATERIALS:

One piece of string 3 ft long per group
Magnifying lens/ one per child
thermometers/ one per group

PROCEDURE:

1. Explain to the children that they are going to do plot studies.
2. Divide the class into groups of threes.
3. Show them the thermometers and explain, if necessary, how to read them.
4. Pass out the strings and have the groups spread out, each to a different area. The string should be laid on the ground forming a circle. The group can now begin to carefully examine everything in the plot. Have them look for the things discussed in the beginning, according to the theme of your lesson.
5. Pass out the thermometers only after they have started their study. Have them take the temperature in several different places within the plot (ie. on top of leaves, under leaves, in the soil, etc.)
6. While they are doing this, walk around to the groups to answer and generate questions. Share in their discoveries and explorations.
7. When sufficient time has passed, gather everyone together, collect equipment and have them share their discoveries with the rest of the group. With the things observed, devise a way to categorize them using similarities and/ or differences.

7. DISCUSS:

What did you find in your plot?
Where was it?
What do you think it is?
By looking at it, can you figure out what it is and where it came from?
Who used it or put it there?
What different or similar things did you find?
How many kinds of plants did you find?
Where were they growing?
What did you find under the leaves, in them, or on top?
Were there any differences in the temperatures taken in different places? Why?
Did you find any animals or evidence of animals?

RELATED ACTIVITIES:

Mini Trails
Apartment House
Egg Carton Exploration
Soil Testing
One of a Kind.
Comparative study in a different habitat
Mini Climates

SOME PROBLEMS YOU MAY ENCOUNTER:

Be sure to explain well so they know what they are doing and won't be running around not doing anything. Hand out thermometers only after they have started their study. Watch out for misuse of thermometers, ex. sticking them into soil, stepping on them, losing them in leaves, breathing or touching them while reading. Also misuse of magnifying lens, ex. fire starting. Be sure to count and collect all equipment at the end of the lesson. Discretion should be used when bringing back objects for discussion.

RESOURCES:

Field Guides: trees, insects, flowers, etc.
Peterson and Golden Guides are good ones.

POND/STREAM STUDY

A pond or stream affords any number of outdoor activities. Students may concentrate on biological, chemical, or geological aspects. The fact that students can make much of their own equipment adds greatly to their appreciation and understanding of the study.

OBJECTIVES:

To identify needs for plant and animal life in ponds/streams.
To conduct simple tests (dissolved oxygen, dissolved carbon dioxide, temperature) and record data accurately.
To stimulate interest and awareness at an aquatic environment.
To relate the of an aquatic environment to a non-aquatic environment.

MATERIALS:

Various water test kits
Nets
Sounding lines
Pans
Water sampling bottles
Thermometers
Secchi disk
Minnow trap
Field fuides
Fishing line
Hooks
Buckets

SUGGESTION: Divide your class into small groups. Assign a different task to each.

PROCEDURE:

1. Test water for dissolved oxygen (DO) content. A concentration of 5 ppm is an indication of a biologically active habitat.

2. Test the water for dissovled carbon dioxide. Small amounts of CO_2 are necessary to plant life. Too great a concentration, however, may prove fatal to animal life.

3. Scoop up organisms and sediments from various levels of the pond/stream. A strong, wire timmed net may be used for shallow depths. When working in deeper waters a dredge may be necessary. Empty the contents into the pans for examination.

4. Test the turbidity (clarity) of the water using a secchi disk and sounding line.

5. Take water samples at various depths. The samples may

be examined for DO and CO_2 content, plankton, etc.

6. Determine the depth of the stream/pond at various locations. The easiest way is to use a sounding line.

7. Determine the surface water temperature.

8. Set a minnow trap. Examine the fish and crustacea trapped.

9. Fish the pond/stream. Examine the catch in a bucket or pan.

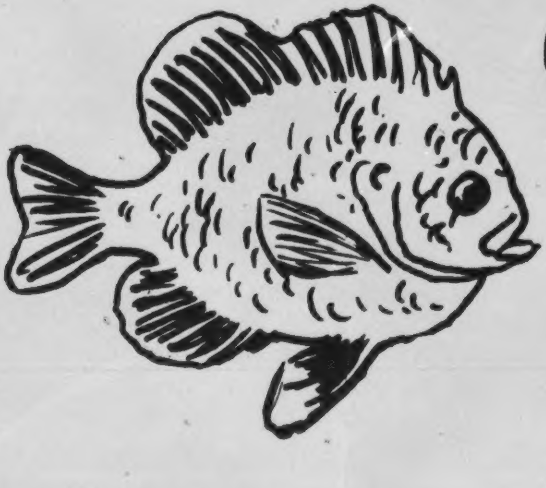
10. Observe the banks of the stream. Determine the general direction of flow. Determine the approximate speed of the stream at various locations.

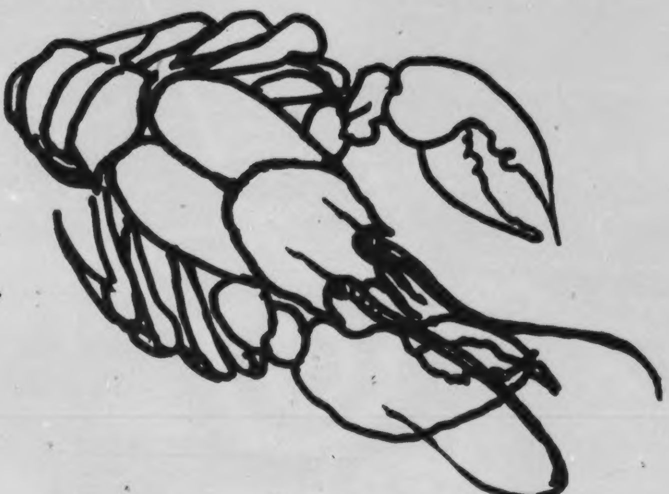
11. DISCUSS:

    What was the average depth of the stream/pond?
    What kinds of animals were caught or observed?
    Was there enough DO to support a large biomass?
    Was the water clean or murkey?
    What is the relationship between air temperature and surface water temperature?

RELATED ACTIVITIES:

Build and maintain a fresh water aquarium.
Discover what factors add to the pollution of the water in your area.
Compare the results of studies done in a pond to those of a stream.





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POND LIFE, George Reid, Golden Press, New York 1967.

FIELD BOOK OF PONDS AND STREAMS, Ann Hewen Morgan, G.P. Putnam's, Sons, New York 1930.

FRESH WATER LIFE, Leon A.Hauseman, G.P. Putnam's, Sons, New York 1950.

SUN FLECKS

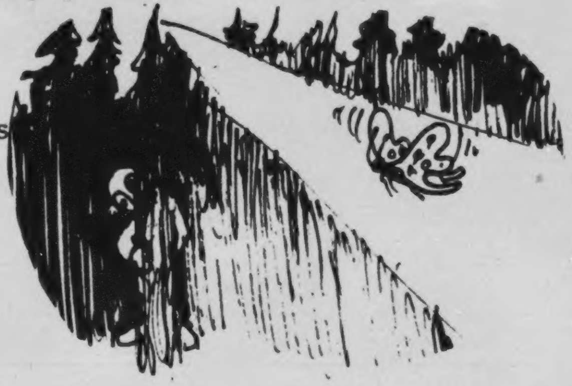
The forest is alive year round, but in the spring this fact becomes more evident. Some of the most important factors in this seemingly revitalization process are light and heat from the sun. These two things porvide the energy for driving the entire forest ecosystem.

OBJECTIVES:

To observe the effect that sunlight filtering down through the canopy has on the forest floor.
To observe and grasp better understanding of time in relation to the sun.
To focus attention to the animal population in a small area on the forest floor.

MATERIALS:

Eight tent pegs or wooden stakes
String
Watch
Pencil and notebook
Hand lens
Ruler
Field guides



PROCEDURE:

On a sunny day go to a wooded area. For an observationial site choose an area with a broken forest canopy. This should allow for plenty of sun flecks - little patches of sunlight filtering down through the canopy.

Stake out a small rectangular portion of a sun fleck and portion this area off with the string. Do the same with a shaded area. Record the time. Determine the approximate area under observation. Take and record a census of the animal population in each area. Put one hand in the shade and then in the sun to feel the difference in temperature.

Return to your observational sites the next sunny day at approximately the same time. Repeat the animal census in both areas.

DISCUSS:

Did the sun fleck appear in the same place at the same time on the second day?
Do you think that a sun fleck represents a stable habitat.
Did the same animals appear in the sun fleck as in the shade?

RELATED ACTIVITIES:

If possible, continue observing the test sites ofr a week or two. Record the changes in animal population.
Observe the test site during two different seasons.
Learn to tell time using the sun.
Learn how to determine heights of objects using shadows.

TREES ARE GOOD FOR EVERYTHING 29

Trees play a major role in the lives of many of the earth's animals. They provide food, shelter, clothing, warmth, and raw material for the livelihood of a myriad of species from insects to man. A tree stump can be used to tell the story of a tree's life.

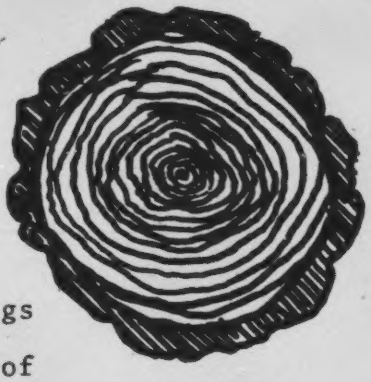
OBJECTIVES:

To inform students on the three ways a tree grows, how trees can be used as a "history book" and how tree rings are "calendars" which can indicate climate.

MATERIALS:

Tree stump with visible rings
Roll of adding machine tape (or strip of blank paper)
Thumb tacks
Pencils or crayons

PROCEDURE:



1. DISCUSS how trees grow.
   a- tips of branches (twigs)
   b- tips of roots
   c- in circumference (tree rings)

2. Find a tree stump having visual rings.
   a- count the rings of the stump
   b- measure the distance between the rings and graph the results.
   c- find the circumference and diameter of the stump.

3. Tree Ring Rubbings.
   a- Have students work in groups of 2-4 and each group find a stump with clearly visible rings.
   b- Place a strip of (adding machine paper) paper over study areas and tack both ends down with thumb tacks.
   c- Hold pencil or crayon parallel with surface of stump. Work from the outer edge to the center.
   d- While the tape is still in place, mark with a sharp pencil the outer edge of each tenth ring from the year the tree was cut till the center. (Note the opposite half may not be an exact duplicate. Why not?)

4. DISCUSSION:
   a- In what year(s) did the tree grow well? Why?
   b- In what year(s) did the tree not grow well? Why?
   c- How old was the tree when it was cut down?
   d- Why do you think it was cut down?
   e- What type of tree was it?

RELATED ACTIVITIES:

Find the average rate of growth in 10 year intervals.

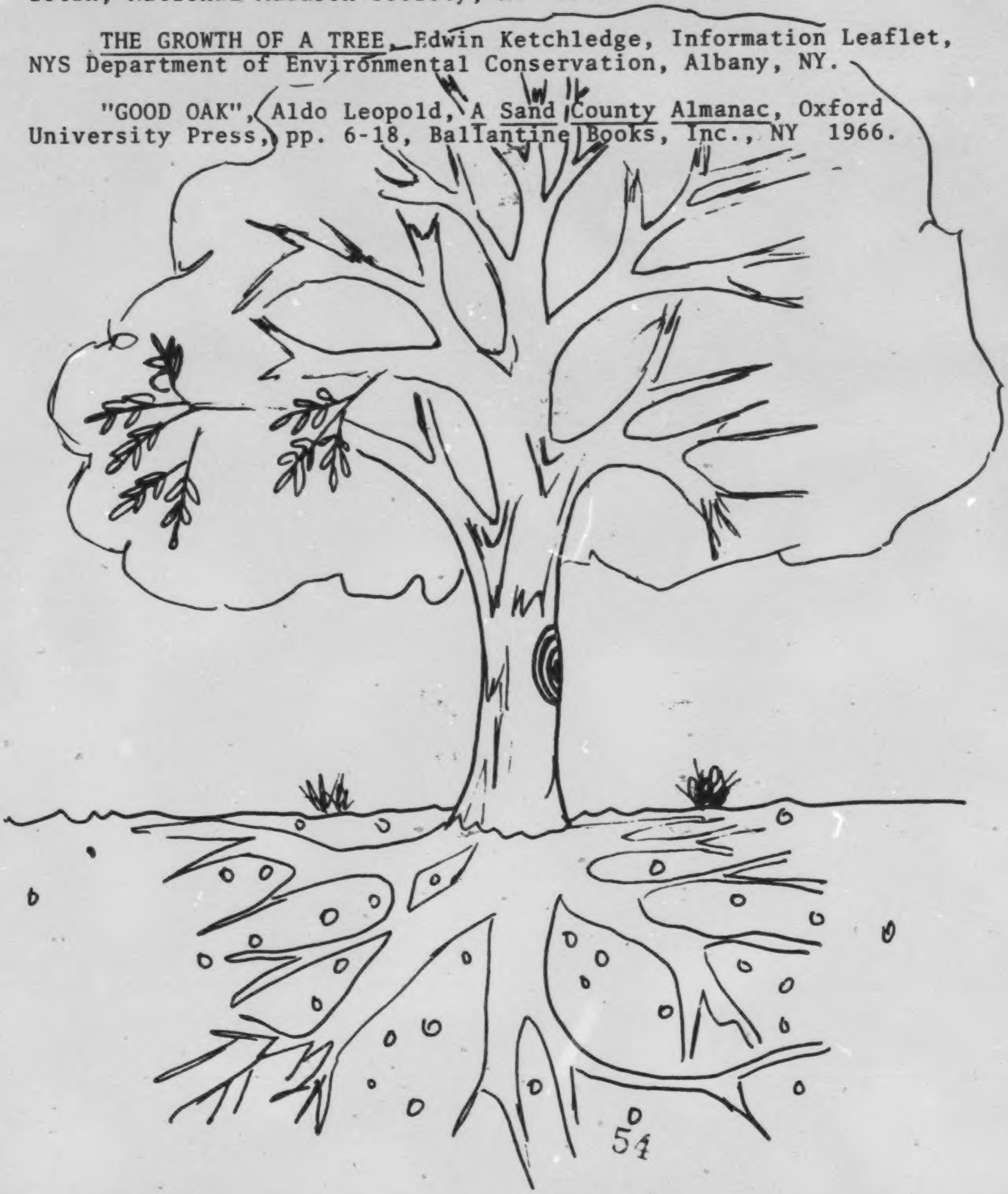
Measure the diameter, circumference and height of a tree.
Read "Good Oak" in *A Sand County Almanac* by Aldo Leopold.
Through creative dramatics, reinact the historical events mentioned.
Make a poster illustrating the life cycle of a tree.

RESOURCES:

"TREES ARE HISTORY", Charles E. Mohr, Audubon Nature Bulletin, National Audubon Society, NY 1971.

THE GROWTH OF A TREE, Edwin Ketchledge, Information Leaflet, NYS Department of Environmental Conservation, Albany, NY.

"GOOD OAK", Aldo Leopold, *A Sand County Almanac*, Oxford University Press, pp. 6-18, Ballantine Books, Inc., NY 1966.



WATER IN SPRING

Once spring arrives plans can be made for a short hike or trip to examine a body of water. The size, location and intensity will depend on what's available.

OBJECTIVES:

To observe and record various characteristics of a body of water during the spring.
To introduce the concept of thaw -- the effect in water temperature and aquatic organisms.
To provide an opportunity for discussion of safety and concerns which come from the unknown.

MATERIALS:

Rope
Stop watch
Clean plastic or glass containers
Microscope
Yardstick
Fishing line and weight
Thermometer

PROCEDURE:

1. Use thermometer to record temperature reading of water.

2. Record temperature in the area under study.

3. Have the students observe the area and create a list of items noted ie: animal tracks, ice, objects floating or caught, animals and insects.

4. Compare water sample with water taken from a faucet.

5. Attempt to do some depth studies using a yard stick, a fishing line and a weight.

6. Let the group discuss the water sources and the eventual run off.

7. Calculate flow of water by using a tennis ball, a piece of rope and a stopwatch or watch with a second hand.

DISCUSSION QUESTIONS:

What do you call this body of water?
Is it man made?
What's its source?
What's its use?
How do you know if it's clean?
Why do we worry about people's safety around water?

RELATED ACTIVITIES:

Create a vocabulary list of names of various bodies of water.

Investigate sources of water used by the area.

Visit a water company or plant.

Visit a site where a well is being installed.

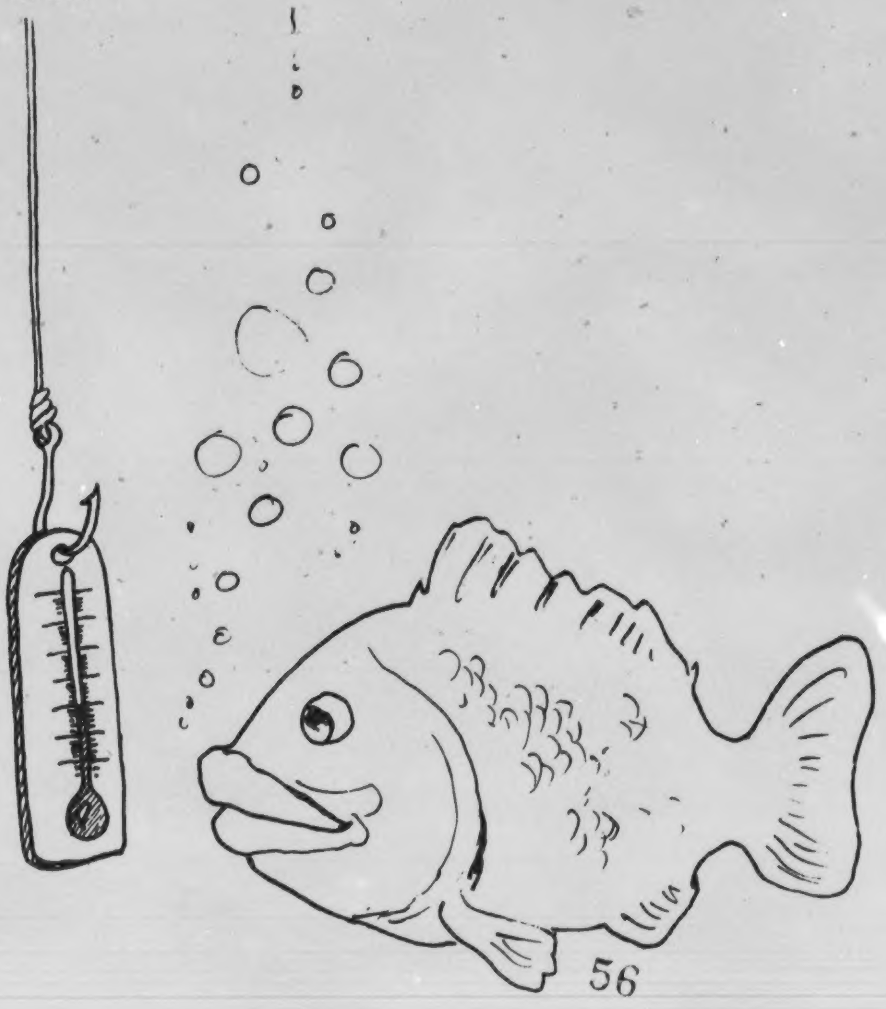
Invite in a speaker involved with local water and sewer problems.

Set up an aquarium and discover the problems of stabilizing the tank so that fish and plants can live.

RESOURCES:

BEGINNER'S FUIDE TO FRESH WATER LIFE, Leon A. Jausman, G.P. Putnam's Sons, NY 1950.

FIELDBOOK OF PONDS AND STREAMS, Ann Morgan, G.P. Putnam's Sons, NY 1930.



WEB OF LIFE

"I need you but he needs me." No, its not a soap opera but a complicated web of life that we all participate in - like it or not. Come explore the many different habitats on our sunship earth.

OBJECTIVES:

To have everyone actively involved.
To utilize inductive and deductive reasoning.
To utilize/refer to reference books.
To grasp a better understanding of this "web of life".

MATERIALS:

Web of life cards and signs
Reference books
Balls of string or twine.

PREPARATION:

Make web of life cards - use index cards and write the name of an animal belonging to a particular habitat. Also make signs for each habitat (ie. thicket, meadow, pond, stream. forest, field, modern city, colonialtown. Collect good resource books such as PALMERS FIELD BOOK OF NATURAL HISTORY, GOLDEN GUIDES, PETERSONS FIELD GUIDES, etc.

PROCEDURE:

1. Have each habitat staked out with large sign (ie. thicket).
2. Randomly pass out cards to participants.
3. The participants must be able to justify his place within the habitat by stating what he has to offer and what he needs from it in return. (Use reference books).
4. Once everyone has found the correct habitat pass out a ball of string to each group.
5. Have each habitat individually make their own web according to who need who (ie. owl needs mouse, mouse needs grass). The string will be passed between these members.
6. Allow habitats to visit other habitats (leave one person behind to explain the habitat to the visitors).
7. Now make a large web by connecting the habitats (ie. stream needs pond, pond needs meadow, etc.)

HELPFUL HINTS:

Try to have one adult leader for each habitat.

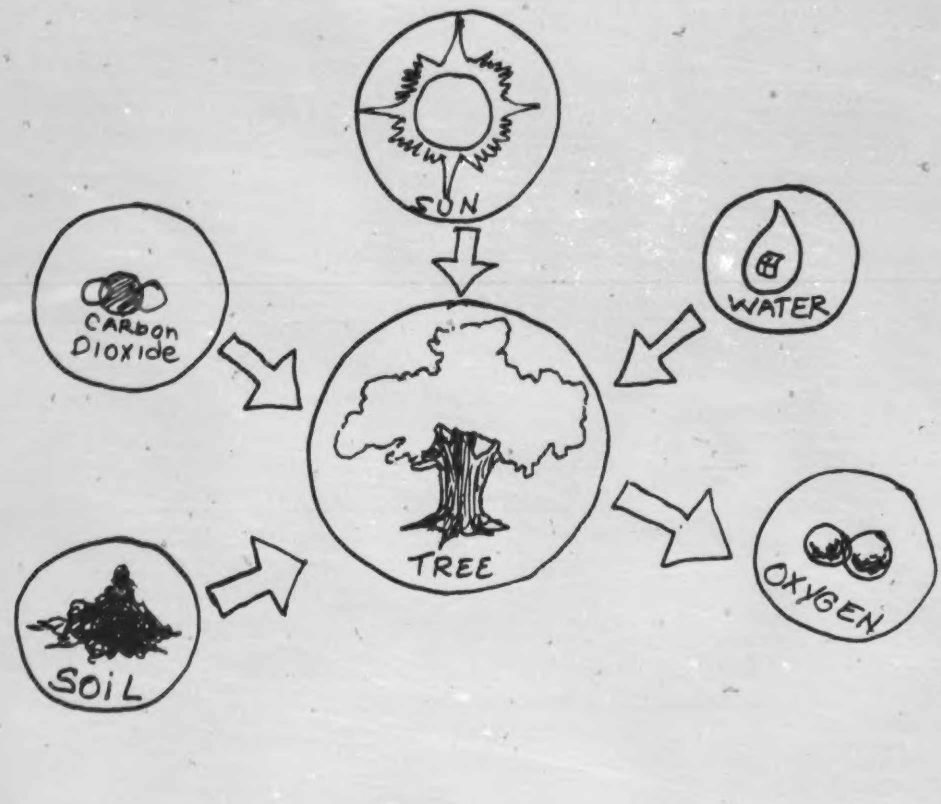
Help students with reference books.

DISCUSSION QUESTIONS:

Discuss our need in terms of the future/past (ie., modern city, colonial town.

RELATED ACTIVITIES:

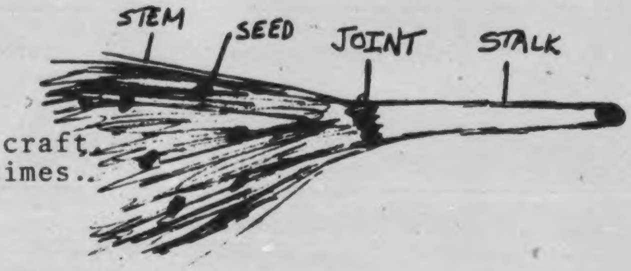
Trace a system outdoors - starting with any object - trace its needs of past, present and future, include a violation (pollution), show what closes down and affects the habitats.
Visit each habitat.
Visit a sewage treatment plant and the effects on the environment.
Investigate their own type of sewage system (ie., septic systems).
Find out what they can do to keep the system running and how they can improve it.
Discuss the effects of hunting or fishing, set up a debate. Have local experts come in and discuss.



BROOM-MAKING

32

With so many modern conveniences in our times, we tend to take them for granted. When we are in need of something, we go to the store and buy it, never stopping to think of where it has come from and how it was made. The colonists didn't have it quite as easy as us. They had to make many things for themselves. This activity will allow the student to participate in a colonial craft and make his own broom.



OBJECTIVES:

To make a broom.
To experience a colonial craft.
To discuss the colonial times.

MATERIALS:

Broomcorn - app. ½lb/person
Postal scale
Pruning shears of scissors
Heavy string or twine
Pencil
Short, sturdy stick (6-8")
Door with door knob or cup hooks and work table
Hammer
Jackknife
Branch (about 1" diameter)
Awl
Drill
Dull, scissor-like object (V edge)
Ruler

PROCEDURE:

It is always good to start off with a discussion of the colonial period so the children can get a feel for the craft. Discuss the materials they will be using including facts such as, broomcorn is not corn, brooms in general use today are made by machine but they are still made with broomcorn, and people of earlier America, as well as some people today, had to make their brooms by hand.

A. Prepare Broomcorn.

1. Remove seeds by pulling the pieces of broomcorn through a dull scissor-like object (wedge).
2. Select about 24 pieces of broom corn. Weigh them and add or take away pieces until it weighs about one-half lb.
3. Line up pieces of broomcorn on table or floor so that all "joints" are together. Stalks will be different lengths.
4. Find the shortest stalk and with a pencil, mark each stalk to that length.
5. Cut each stalk on the pencil mark.
6. Gather all pieces in a bunch with ends of stalks even.

B. Set up work area.

1. Tie one end of a 4 ft. section of string to some immovable object (doorknob of a locked door) OR screw cup hook (or bent nail) into sides of an old work table and tie one end of a 4 ft section of string to the hook.
2. Tie the other end of the string to the short sturdy stick.

C. The Broom.

1. Broom-maker wraps string (the one tied to doorknob or hook) twice around bundle about 1-2" below the joint on the stalk. (stalk ends should be even.)
2. Partner holds onto short stick at end of string and pulls string taut.
3. Broom-maker carefully rolls the bundle toward the immovable object and then back to partner. String MUST be held taut.
4. Broom-maker repeats this step 3-4 times until bundle is very tight. (Broomcorn stalks should look "curshed".)
5. Broom-maker twists bundle around one full turn (circle). Be sure strings will cross and not come undone while twisting.
6. Cut string at ends and tie on opposite side of the twist. Tuck string ends into bundle with an awl.
7. Repeat tying procedure (steps 1-6 above) in two more places.
    a. one toward the end of the stalk about 1-2" from the end.
    b. one beyond the joint - about 1-2" on seed "stems".

D. The Handle.

1. Find a branch about 1 inch in diameter and about 1-2 ft. shorter than the desired length of the completed broom.
2. Whittle one end to a blunt point and/or notch the branch about 1-2" from the end.
3. Place whittled end into center of the end of tied bound stalks.
4. Partner hold broomcorn while broom-maker hammers in the handle so that the bottom of the handle is beyond all three bindings of the broomcorn. (If handle is notched, third binding should rest in the notch.)

E. Finishing Touches.

1. Trim all "seed stems" evenly to desired length of broom.
2. Drill a hole in top of handle and place string in it for hanging.

NOTE: When broom wears down, trim off stems evenly. Broom should either be hung off ground or placed upside down on the floor (stems will "warp" of allowed to rest on the floor.)

RELATED ACTIVITIES:

Read about Ben Franklin - inventor of corn brooms.

Write a story - a day in the life of a broom; a day in the life of an earlier American; etc.

Compare construction and content of modern and hand-made brooms.

Estimate the cost to make one corn broom - by hand.

Discuss changing lifestyles.

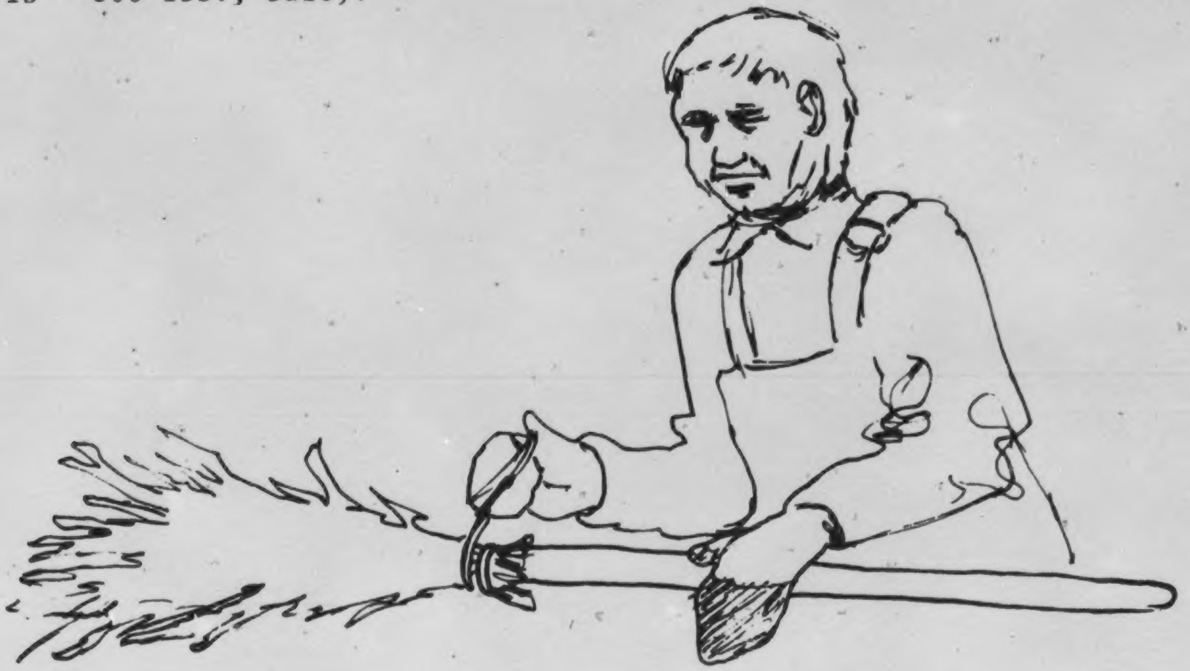
Discuss the uses of broomcorn.

RESOURCES:

National Broom Council, 333 North Michigan Ave., Chicago, Illinois 60601.

FOXFIRE 3, Eliot Wigginton, ed., Garden City, NY, Doubleday & Copany, Inc., (Anchor Books), 1975.

Lancaster Broom Co., S. Lancaster, Mass., (Fall 1975 - $.50/ lb - 300 lbs., bale).



BUILDING A TREE

This is an interesting motivational exercise to teach that parts form a whole object.

OBJECTIVES:

To train observational skills through this visual motor training exercise.

To have students make a tree from leaves and bark that they have collected.

MATERIALS:

Leaves
Glue
Construction paper
Twigs or bark

PROCEDURE:

1. Have the students gather leaves that have fallen from the trees. Also you may wish to gather some twigs.
2. Pass out construction paper.
3. Have the students glue the leaves to the paper and glue the bark or twigs on, simulating a tree.
4. Hang the pictures.

RELATED ACTIVITIES:

Make a flower.

Name and label the parts of the tree.

Use this activity in conjunction with "The Wooded Age".

CIRCLE OF FRIENDS - COUNCIL RING

The council ring was an important ritual among Indian tribes. "Silence is the absolute poise or balance of body, mind and spirit." "(The Indian) never claimed that the power of articulate speech was proof of superiority over the creatures, on the other hand, it is to him a perilous gift." "Guard your tongue in youth. . .and in age you may mature a thought that will be of service to your people."

This activity can be used in a classroom. Form council rings to accomplish duties/assignments that may otherwise be boring or unexciting.

OBJECTIVES:

To introduce the custom of council ring.
To incorporate the use of good forest conservation when when constructing the ring site.

MATERIALS:

Topographical map
Compass
Ceremonial objects - peace pipe, head dressed, blankets, candles, etc.

PROCEDURE:

1. Decide what environment is best for a council ring? (near a stream, hill, quiet, valley, etc.)
2. Does anyone know of a good area - children may look for a suitable spot through use of topographical maps, compasses, and/or a hike.
3. Practice good conservation techniques (erosion prevention and careful cutting).
4. You must consider accessibility and amount of traffic the site will receive.
5. As a classroom activity - rearrange classroom in a way agreed upon by the students.

RELATED ACTIVITIES:

Make ceremonial head-dresses, banners, badges, etc.
Each child may think up a special name to be used only during the ceremony.
Ceremonial candles can be made.
Sing Indian songs.
Build a fire with matches and if possible try using the bow and drill method.

SOME DISCUSSION QUESTIONS COULD BE:

Who performs rituals? Were the Indians the only ones: How about Hawaiians, Eskimoes, Polynesians, Africans? What rituals do we perform? Graduation, wedding, pledge of allegance, funeral, birthday, court proceedings, church (praying, communion), bar mitzvah, Quaker Friends' meetings

RESOURCES:

FIELDBOOK, Boy Scouts of America, New Brunswick, New Jersey, 1967.

THE SOUL OF THE INDIAN, Dr. Charles Eastman.

THE INDIANS OF NEW JERSEY or DIKON AMONG THE LENAPE. This narrative follows a group of Delaware Indinas, whose lifestyle was very similar to local Indians, through a year with good activity descrition.

CITY TRAIL MAKING

Plan a trail which will take you (by foot, car, charter bus, or public transporation) to several related points of interest. You might choose to visit several historic landmarks, like Boston's "Freedom Trail" or decide on an area of interest such as museums, newspaper offices, or craft exhibits or trace a product from raw material to finished product by visiting several stages of production.

OBJECTIVES:

To learn how to read and use a map.
To plan the best route to get where you're going.
To enjoy the benefits of taking the trail after it is planned.

MATERIALS:

Maps
Pencils
Erasers

PROCEDURE:

1. Compile a list of points the trail must reach and the order they should be reached if that is necessary.

2. As a class or in small groups, draw the route on the map - considering alternatives and choosing the best path.

3. On 3 X 5 cards write a paragraph about each place that will be visited.

Discuss:

4. What makes one route better than another?
How much distance and area does the tour cover?
How much travel time will be needed?
How much time will be needed at each stop?
What will be the best means of travel?

5. Take the tour after the best route has been agreed upon.

COKE BOTTLE CRAFT

36

This activity was developed by one of our teachers who has done a lot of recycling activities with plastic coke bottles.

OBJECTIVES:

To build a simple terrarium from recyclable throw aways.
To study how plants grow.

MATERIALS:

One 32oz. plastic coke bottle
Gravel
Charcoal
Soil
Plants
Sharp Knife

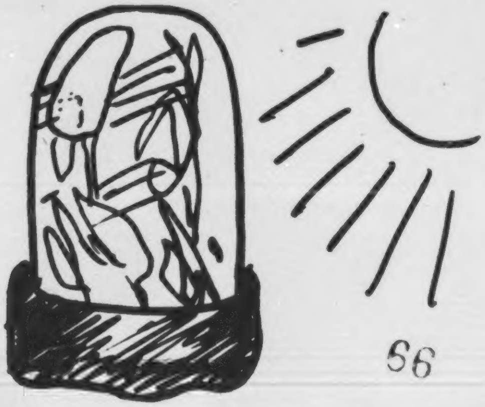
PROCEDURE:

1. To remove label and black plastic stand - run hot water over the bottle until the label peels off and bottle stand is separated from the bottle.
2. Cut the neck of the bottle off about 4" from the top evenly. Check to see that the bottle fits snugly upside down into the bottle stand.
3. Add 3 or 4 tablespoons of gravel and charcoal into the base and cover with soil.
4. Now add houseplants, cuttings, or seeds, replace bottle into the base and set it in the sun.
   SOME DISCUSSION QUESTIONS:
5. Does the terrarium need direct sunlight?
   Does it need to be watered?
   Can an animal be introduced to the terrarium?
   How quickly do the plants grow?

RELATED ACTIVITIES:

Visit a solar greenhouse or a botanical garden.

Graph and compare how much water is used and the response of the plant to direct sun, indirect sun and darkness.



CONE CREATURES 37

Cones of all shapes and sizes can be used whole, sawed into slices, broken or dissected into scales for this project. This is a very simple activity and doesn't take much time to do.

OBJECTIVES:

To make a cone creature.
To identify trees by their cones.

MATERIALS:

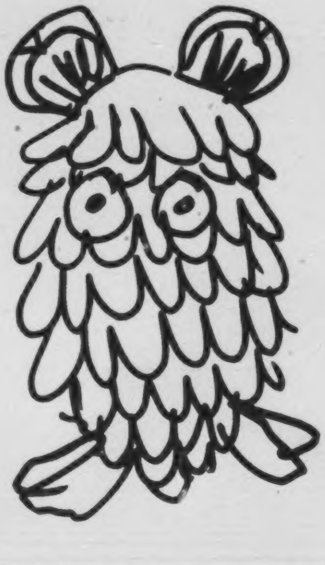
Any cones that are available - pines, spruces, firs, hemlocks
Other dried materials - seeds, pods, wood, needles, feathers
Modeling clay - assorted bright colors (a one-pound box might last for 60 projects). Do not use pottery clay, it becomes brittle when dry.

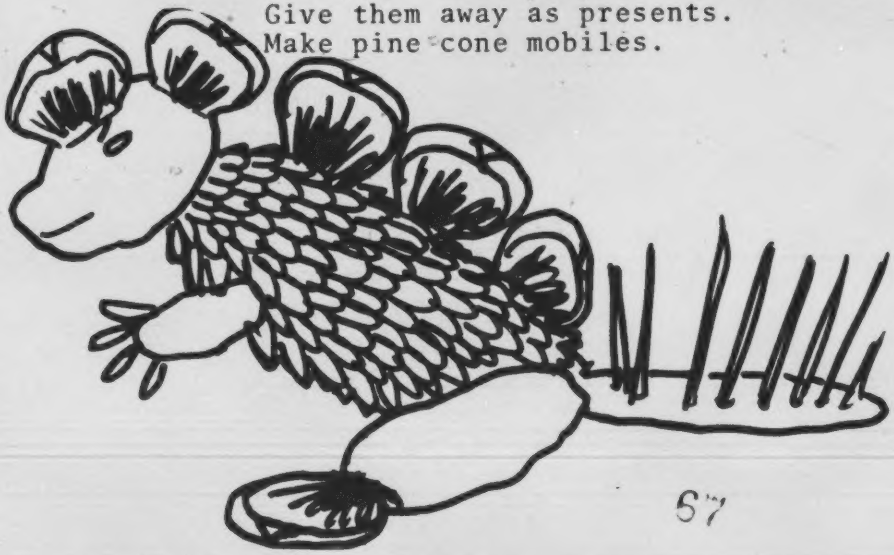
PROCEDURE:

1. Collect pine cones of all sizes and types.
2. Clay is pressed in between the bracts as the medium for holding appendages in place. (ie. bundles of pine needles pressed into the clay to form a tail or scales to form feet.)
3. Two color clay eyes may be secured by pressing them on to the cone.
4. Reliefs can be made by gluing cone scales onto construction paper in the pattern of an owl or the sun, for example.

RELATED ACTIVITIES:

Put on a play with the new creatures.
Put them on display or have a craft fair.
Give them away as presents.
Make pine cone mobiles.





CRICKET CAGE - ZOO

Have you ever thought about creating an insect zoo? Try to make this mini-zoo for a classroom science project and set it on display for others to see.

OBJECTIVES:

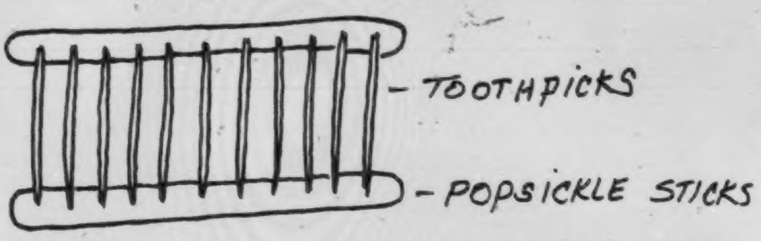
To introduce the world of insects.
To make a craft.

MATERIALS:

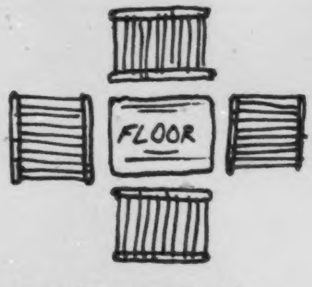
Popsicle sticks - 40
Toothpicks - 50
Glue
Wire
Insect

PROCEDURE:

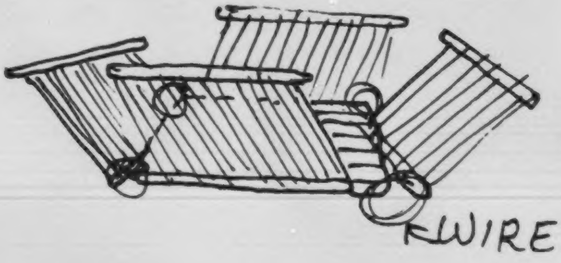
1. Lay popsicle sticks in a square and glue.
2. Lay popsicle sticks flat on square to make a floor. Set Set saide - repeat 2 times.
3. Take two more popsicle sticks and lay parallel to each other - glue toothpicks across the sticks to make bars.
4. Repeat 4 times, these will be the walls of your cage.



5. Lay pieces out like illustrated:



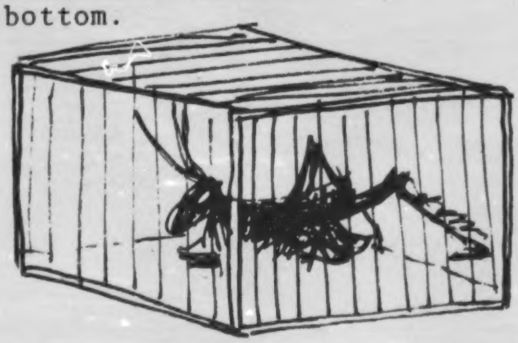
6. Take wire and wrap each corner to opposite and tie.



7. Stand walls up and wire top corners.

8. Catch cricket or other such unsuspecting insect and place into cage.

9. Quickly take top and wire to bottom.



10. Remember to feed the insect and return it to where it was found when you are through.

11. Discuss what crickets eat, what an insect is, what other insects can be caught and studied.

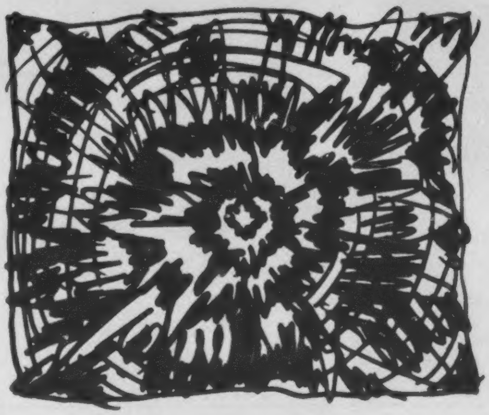
RELATED ACTIVITIES:

Study other insects.
Take a two foot by two foot section of grass and list how many and what type of insects or bugs you see. Do this again in different foliage.

Always remember to return the insects to their natural environment.

"DIP AND DYE"

With a twist of the hand you can create a web of colorful patterns on cloth.



OBJECTIVES:

To introduce color blending.
To introduce tie dyeing.

MATERIALS:

Poster paint
Water color paint
Food coloring
3 small wash basins
Rubber bands
Cloth

PROCEDURE:

1. Take cloth and wrap in any manner - tie off with rubber bands.
2. Add the above coloring agents to wash tubs - dilute.
3. Dip cloth into colored water.
4. Remove and allow to dry.
5. When dry, remove rubber band and discover the pattern of color on cloth.
   This is an interesting way to find out how cloth is colored and how patterns can be made on cloth.
   SOME DISCUSSION QUESTIONS ARE:
6. Did you create another color than the ones that were used? What color?
   Did the way you wrap the cloth change the design?

RELATED ACTIVITIES:

Tie dye an old T-shirt.

Try some Batik.

Try making dyes from plants.

Compare dyeing different types of cloth.

FISH SCALER

Many children love to catch fish but not as many like to clean them. This implement will make it easier to perform the disagreeable task of scaling fish.

OBJECTIVE:

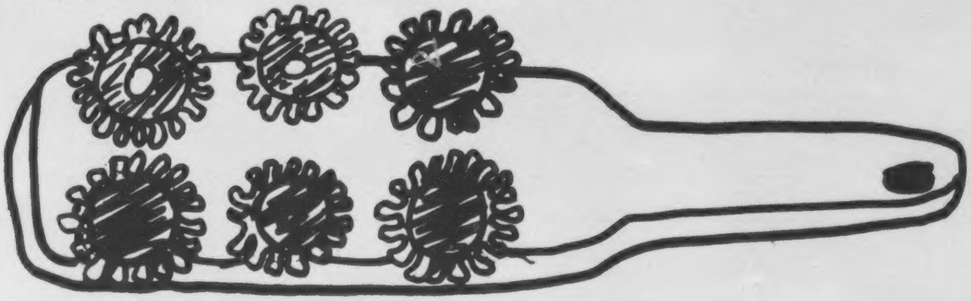
To produce a fish-scaler.
To promote resourcefulness.
To increase hand-eye coordination.

MATERIALS:

Crown type bottle caps
Small roofing nails or carpet tacks
Pieces of wood about -" long and 1½ X 1" wide

PROCEDURE:

1. Sand the wood smooth.
2. Nail bottle caps (open side away from the board) to board in a row about four inches long. The rest of the board will be used as the handle.
3. Scrape across the scales of the fish.



RELATED ACTIVITIES:

Have the children identify the fish indigenous to the area.

Identify the parts of a fish and their functions.

Go fishing and have a picnic with what is caught.

FENCES

41

What is the use of a fence anyway. Is it to lock things up or to keep things out. For example, the fence around a cemetery, why is it there? We know no one wants to get in there and I don't think anyone is going to get out. Let's explore.

OBJECTIVES:

To increase observational skills.
To use the idea of comparison.
To increase measurement skills.
To record information.

MATERIALS:

Pencils
Paper
Meter sticks or rulers
Something to lean on

PROCEDURE:

1. Take a ½--1 hour walk through a neighborhood or a nearby farm that has stone fences. Several such walks might be needed for each child to collect several sketches or each child could be assigned one fence to explore.

2. Divide the class into small groups to go on an observational walk. The teacher can walk from group to group to help out.

3. Have the children look for similarities and differences among the fences they are able to find.

4. They will record their observations by means of a quick sketch.

5. If time permits, they can measure the height of vertical posts and length of horizontal bars. Note the measurements on their sketches. They can also record if these sizes are consistent for the length of the fence.

6. DISCUSS:

   Why were fences made in the first place?

   Discuss how certain kinds of fences are suited to certain uses and certain areas.

RELATED ACTIVITIES:

Research and find poems concerning fences and have the children compose their own.

HOBO STOVES AND OUTDOOR COOKING

Successfully cooking a meal outdoors, with home made materials, is an enjoyable and (hopefully) nourishing experience that can allow the child to constitute himself in the outdoors. It can be an added attraction to the lunch hour, or the jumping off point to a number of related interesting activities and study topics.

OBJECTIVES:

To make a complete meal.
To make a stove.
To increase survival skills.

MATERIALS:

Number ten can (one gallon)
Tin snips
Can opener
Matches
Materials for a small fire
Food to cook and eat

PROCEDURE:

1. Cut off one end of the gallon can.

2. At the open end of the can, cut a door 3 inches high and four inches wide. Leave the top of the door attached. Pull open the door.

3. Slide the cut out lid into the can and wedge it against the inside of the closed end. This will make the closed end thicker and allow it to get hotter when cooking.

4. At the top of the stove (the closed end) and on the opposite side from the door, punch five holes with the can opener. This will allow for a vent and keep the loose end in place.

5. Collect materials for a small fire When the stove is hot enough you may cook directly on the closed end.

6. Hamburgers, eggs and bacon are excellent and easy things that can be prepared. Before deciding on what to eat, a discussion of nutrition may prove appropriate.

SOME IMPORTANT TIPS:

Get the fire going first and then place the stove over the fire.
Have the open end facing the wind to allow for mare ventilation.

RELATED ACTIVITIES:

Study the fire, it's principles, maintenance and control should accompany a project such as this one.

The kinds of woods suitable for fires can lead to the classification and identification of trees.

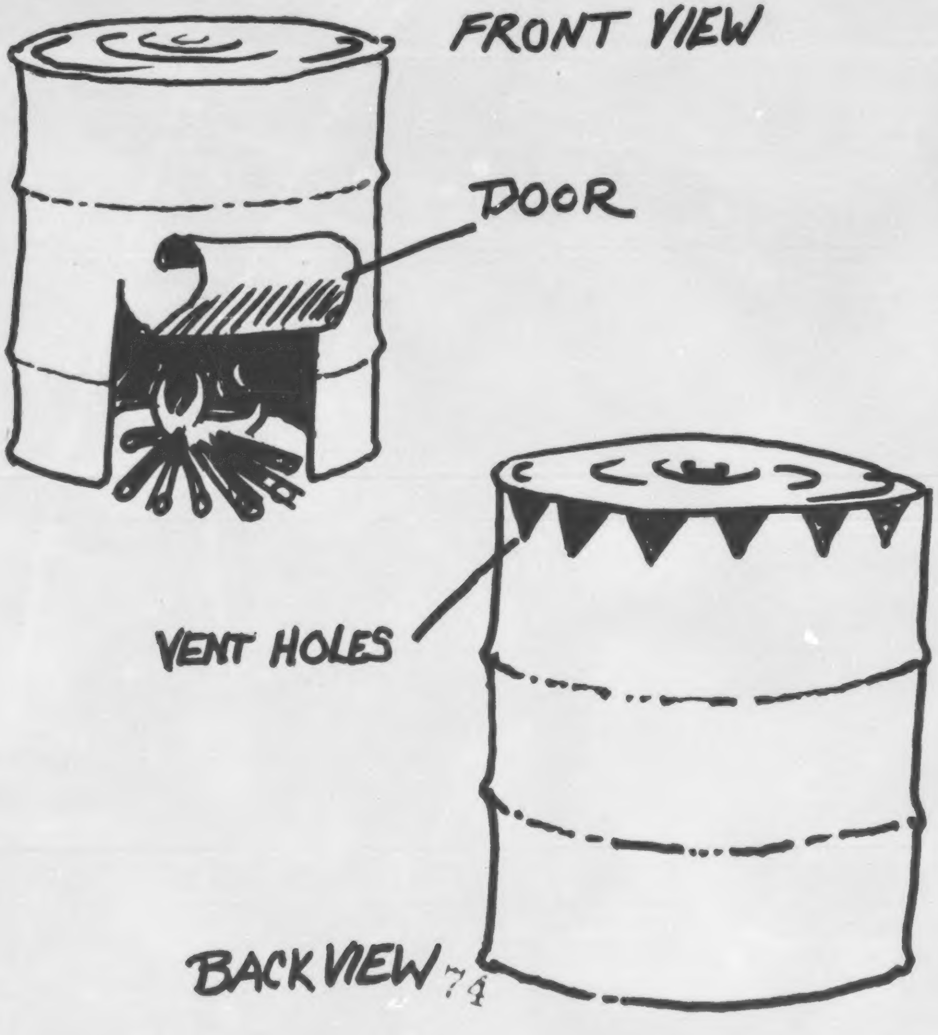
There are a number of books and articles related to survival that will offer a number of ideas and projects. Here are a few that can be used by students at almost any age.

RESOURCES:

OUTDOOR SURVIVAL SKILLS, Larry Olsen, Brigham Young University Press, Provo, Utah, 1967.

BUSHCRAFT, Richard Graves, Schocken Books, New York 1972.

ROUGHING IT EASY, Dian Thomas, Brigham Young University Press, Provo, Utah, 1974.



HOMEMADE FISHING BAIT

Fisherman are always looking for a new way to catch the fish that got away. In this activity the participant can use his own expertise and judgement to design the bug he thinks will work.

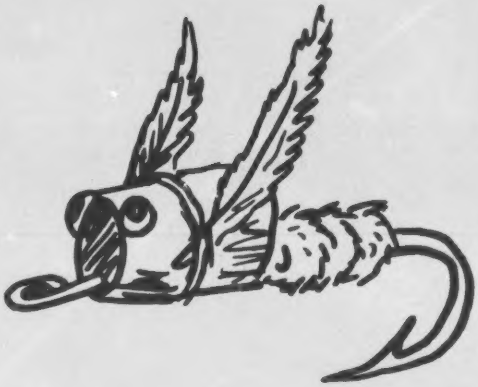
OBJECTIVES:

To allow the participant to gain a sense of satisfaction from attempting to catch a fish with his own handiwork.

To improve manual desterity.

MATERIALS:

Long hooks
Threads of various colors
Nail polish
Nylon filament (fishing line)
Tin foil
Pipe cleaner
Feathers
Bits of cloth or wool
Bits of fur
Toothpicks



PROCEDURE:

1. Wrap foil or any of the above mentioned materials around the hook with a piece of line. Knot it. (Fuzzy or shiny objects catch their eye)

2. Attach this to your fishing line.

3. To float the hook and bait, cement a few toothpicks to the hook with nail polish.

BE CAREFUL - DON'T POKE YOURSELF WITH A HOOK!

RELATED ACTIVITIES:

This activity leads to another activity - fishing.
Interested participants could also engage in the art of fly tying and insect studies.
Log the type and size of the fish caught.

IGLOO CONSTRUCTION

44

It may take you all day to build a snow house or igloo. But, did you know that it only takes an Eskimo 20 minutes. Contrary to popular belief, Eskimos did not invent them though. Norwegian explorers got the idea from the beaver and built the first one in the 1890's. Like beaver lodges that have their entrances under the water, real igloos have their doors under the snow. This keeps the wind out and the heat in.

OBJECTIVES:

To increase group cooperation.
To build an igloo.

PROCEDURE:

There are three basic steps to building an igloo:
1) finding the right kind of snow
2) cutting the blocks
3) putting the blocks together.

Some of the finer details to this project include:

1. Start by joining hands to make a circle.

2. Then, one man stays inside the circle to lay the blocks while the others use a saw or stick to cut them out. If you can just barely see your footsteps in the snow, then your building material is of the right consistency. If the snow has no crust, blocks can be made by packing snow into a cardboard box for a mold.

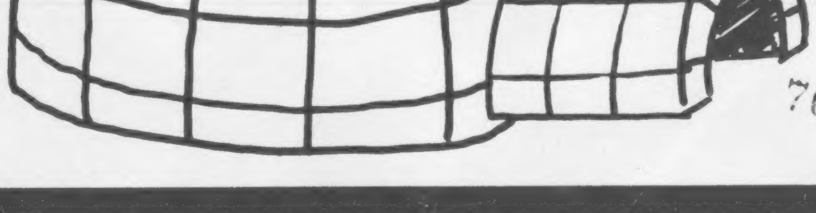
3. The first circle of blocks begins with a ramp and has a slightly beveled edge on top.

4. After the snow house is about 3 blocks high, leave a hole in the wall to pass blocks thru.

5. Keep laying blocks in a spital until closed in.

6. The last block (key) is put in place by turning it narrowise and pushing it up thru the hole. Then it's turned to flatten and let down gently.

7. Dig yourself out and build a wing tunnel over the hole.

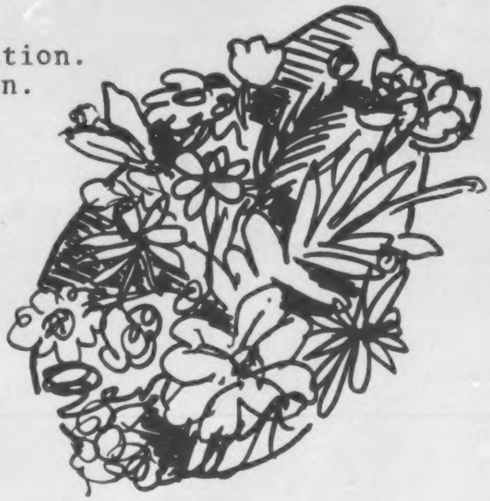


JEWELRY FROM NATURE

Children can make and wear fun costume jewelry in a very short period of time. Many every day objects can be used to make earrings, necklaces, medallions and bracelets.

OBJECTIVES:

To inspire creativity and imagination.
To develop fine motor coordination.
To use recycled materials.
To increase plant identification.



MATERIALS:

Earring wires
Cardboard
Elmer's Glue
Flowers, weeds, etc.
Iron
Colored tissue paper

PROCEDURE:

1. Collect flowers on a nature walk: wild flowers, violets, marsh marigolds, etc. (warn against over picking)
2. Press between paper to flatten.
3. Have the children cut cardboard to desired shape/or the teacher can have prepared shapes ready.
4. Glue plants on the piece of cardboard.
5. Cover the whole piece with diluted Elmer's glue, let dry.
6. Put hole in top of cardboard.
7. Attach to earring wire.
8. Wear for a summery addition to your outfit.

DISCUSS:

Why do you think that the plant you chose is called that particular name?
How did the Indians use this plant?
What type of area did you find it in?
Can you think of other pieces of jewelry which you can make with large plants?

RELATED ACTIVITIES:

TAKE A NATURE WALK AND. . .
See how many children can identify the plants used in your projects.

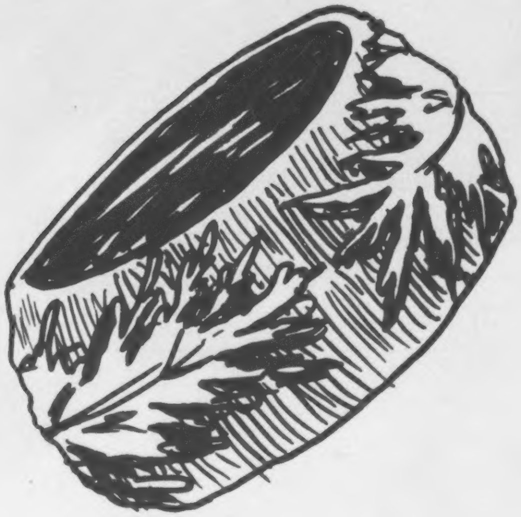
Study plants in other parts of the country.
Compile a wildflower chart.

ALSO:

- Use bits of fall colored leaves instead of flowers.
- Make a bracelet from foil, paper mache, glue on ferns and coat with glue.
- Fern medallions.
- Bright bird feathers to hang from earrings or chains.

RESOURCES:

Drying and Preserving Flowers and Foliage
#307
Family Weekly
PO Box 438
Midtown Station
New York, New York 10018



KITE MAKING

Many children enjoy kite flying but many are unable to afford the high cost of commercial kites. This activity would offer every child the opportunity to enjoy kite flying.

OBJECTIVES:

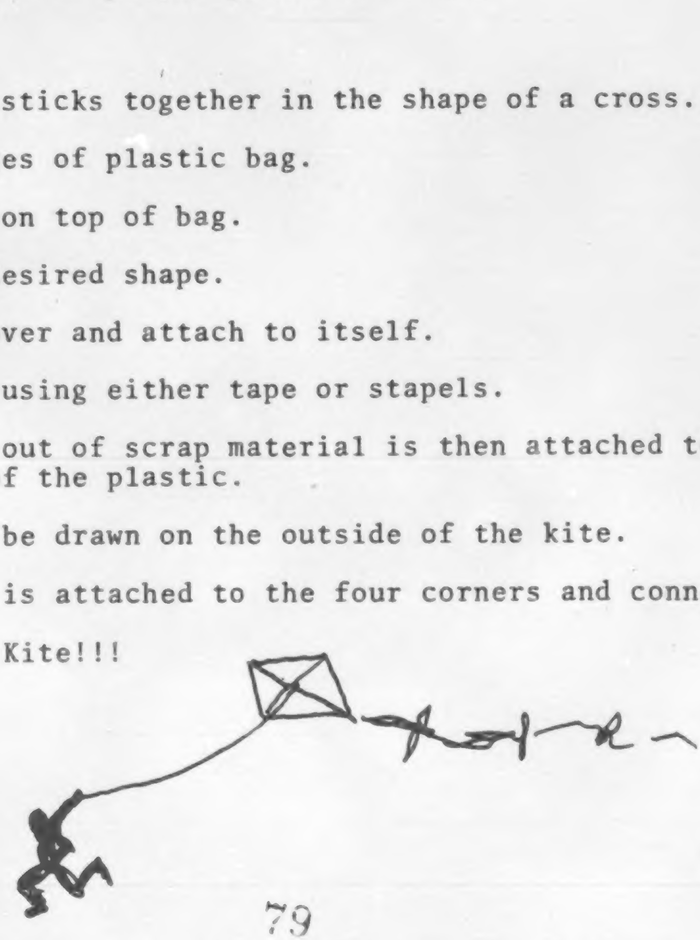
To increase manual dexterity.
To increase the use of hand skills.
To use imagination.
To increase drawing techniques.

MATERIALS:

2 Split bamboo poles of same length (24" length, 1" diameter)
Heavy string (baling twine)
Large plastic garbage bags
Kite string
Scissors - pinking shears, preferably
Stapler
Tape
Cloth scrap material for tails
Magic markers or poster paint and brush

PROCEDURE:

1. Tie the two sticks together in the shape of a cross.
2. Open all edges of plastic bag.
3. Place cross on top of bag.
4. Cut bag in desired shape.
5. Fold edges over and attach to itself.
6. Fasten them using either tape or stapels.
7. A tail made out of scrap material is then attached to the bottom of the plastic.
8. Designs may be drawn on the outside of the kite.
9. Kite string is attached to the four corners and connected
10. Go Fly Your Kite!!!



RESOURCES:

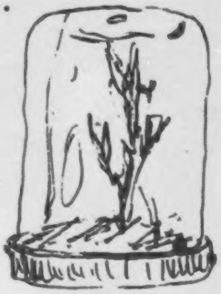
KITES, Brummitt, Wyatt; Golden Press, New York, New York 1971

LET'S BUILD A TERRARIUM

With imagination, many "throw away" or seemingly useless items can be used to make practical or artistic creations.

OBJECTIVES:

To introduce the idea that a terrarium is a closed vessel but is still self-sustaining.
To introduce the idea that the earth is a terrarium on a much larger scale - our "sunship earth".



MATERIALS:

Large mayonnaise jars with lids
Gravel
Soil
Plants

PROCEDURE:

1. Line bottom of the jar with gravel, about ½" deep.
2. Collect soil from selected area you wish to represent in the terrarium (woodland, field, bog, stream edge, desert, garden)
3. Collect small plants from selected areas, pieces of wood, stones, lichens, acorns, etc. for decoration.
4. Fill the terrarium with about 1" soil. Add a few pieces of charcoal to absorb odors.
5. Add plants one at a time and then cover with lid.
6. May also add a small animal or a few insects.

SUGGESTED PLANTS:
fern (christmas, N.Y. fern, polypody), Mosses, Herbs, (partridge berry, wintergreen, lily-of-the-valley)

DISCUSS:

How do plants survive without added air or water?
How do insects survive?

RELATED ACTIVITIES:

Grow plants from seeds (form habitat)
Insect cages from popsicle sticks
Spider cage from jar
Mobiles from scrap materials
Relative humidity gauge using human hair

MAKE A BOX KITE

48

A great simple to-do activity for the outdoors. A do it yourself activity. Most children will love it.

OBJECTIVES:

To inspire creativity.
To make a kite.

MATERIALS:

Newspaper
Glue - homemade: Flour and Water
String
Cloth strips
Sticks or wood
Jack knife

PROCEDURE:

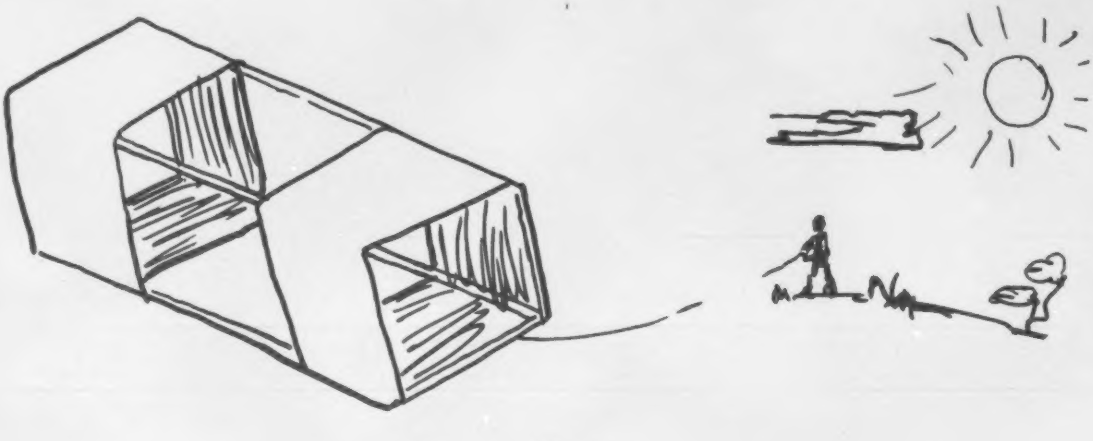
1. Tie your sticks together with string in the form of a box.
2. Cut a ½ inch slit in each end of the sticks. Put a piece of string in the slits, forming a string shape contour.
3. Fold your newspaper around the string contour shape. Paste it to make it secure.
4. The cloth strips are used for the tail of the kite to keep it upright when flying. Try it out!!!

DISCUSS:

Where and why should kites be flown in particular areas? Is wind speed an important factor?

RELATED ACTIVITIES:

Measure wind velocity and determine wind direction.



MAKING A ROCKET

49

Countdown - 9, 8, 7, 6, 5, 4, 3, 2, 1 BLAST OFF!!! It's really out of sight and a lot of fun to make.

OBJECTIVES:

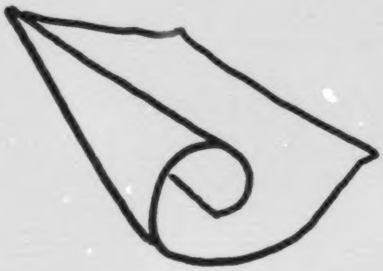
To introduce a craft which provides enjoyment.
To make a rocket.
To learn about colors and shapes.

MATERIALS:

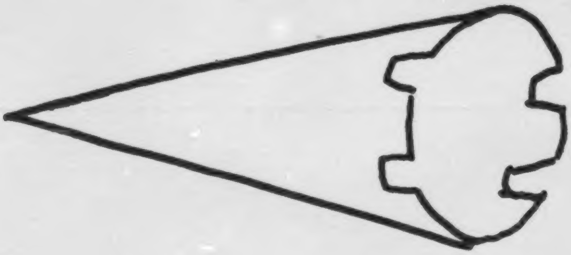
White card
Different colored paper
Scissors
Glue
Tape

PROCEDURE:

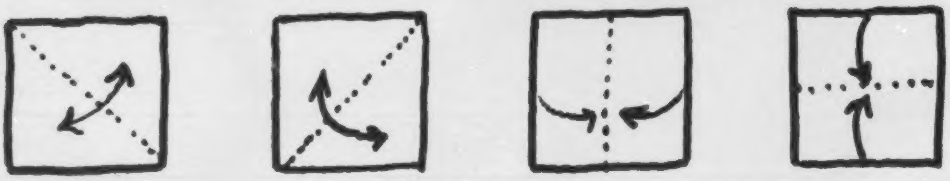
1. Take a sheet of white paper and make a cone. Fold under and cut the outer edge to level off the bottom. Tape it together.



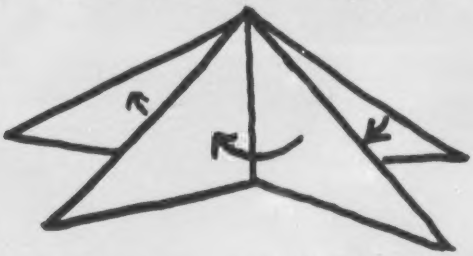
2. Cut four slots. Make sure they are all the same distance apart.



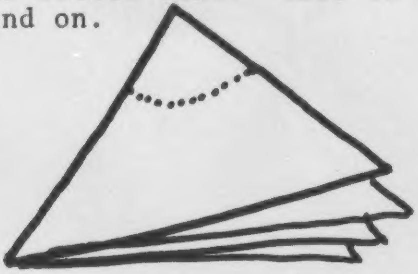
3. Square a sheet of colored paper and fold it as shown.



4. Open out the paper and use the folds to make the shape shown below. Fold the parts together following the arrows.



5. Cut the folded paper on the dotted line. This is the base for the rocket to stand on.



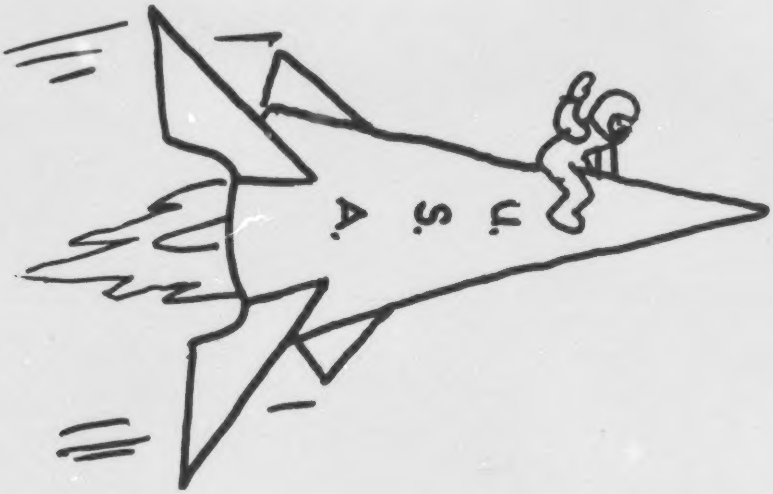
6. Now you can decorate it with colored pencils or strips of colored paper or decals.

RELATED ACTIVITIES:

Launch a play rocket and discuss propulsion, gravity, etc.
Show a film on rockets.
Write to Cape Kennedy for literature.

RESOURCES:

WORKING WITH PAPER, Franklin Watt, Inc., 1971.



MAKING PUPPETS FROM NATURAL MATERIALS

Children enjoy imagining themselves as other kinds of animals. This activity uses simple materials found in the out-of-doors to assemble a puppet on a stick. In the process of making the puppet, children use simple hand skills and make decisions based on their knowledge of a particular animal's adaptations and physical appearance.

OBJECTIVES:

To develop hand skills.
To increase observation.
To increase knowledge of animals.
To increase the use of the childs' imagination.

MATERIALS:

A stick - 12-18 inches long and at least ½" in diameter
White glue or library paste
Modeling clay - the size of a wad of bubble gum
Paper bag to collect materials
4-5 pipe cleaners
Scissors or wire cutters - optional

PROCEDURE:

1. Ask the children, "If you could be any other animal, what would you be?". Then "What size are you?, What color?, What would it feel like to touch you?, What kind of ears, eyes, feet and tail do you have?"

2. Discuss with the children what they could find outside to represent these body parts such as berries for eyes, leaves for ears.

3. Give each child a paper bag and a stick. Tell them they will go outside to gather materials for each part of their puppet. The puppet will be assembled on the stick with the head being the top of the stick and the body being the rest of the stick, i.e. eyes, ears, mouth, feet, tail will be attached directly to the stick.

4. Show the children the materials they'll use to attach their found objects to the stick. The clay and paste can be used to attach eyes, mouth, body textures, the pipe cleaners to bend on ears, legs, feet.

5. Go outside for 15-20 minutes to gather materials and return to assemble the puppets.

6. Assemble the puppets. Ask each child to describe their puppet. These puppets are fragile, they will only last a few days. The process of making it is as much fun as the finished product.

RELATED ACTIVITIES:

Use the puppets to role play the following situations.

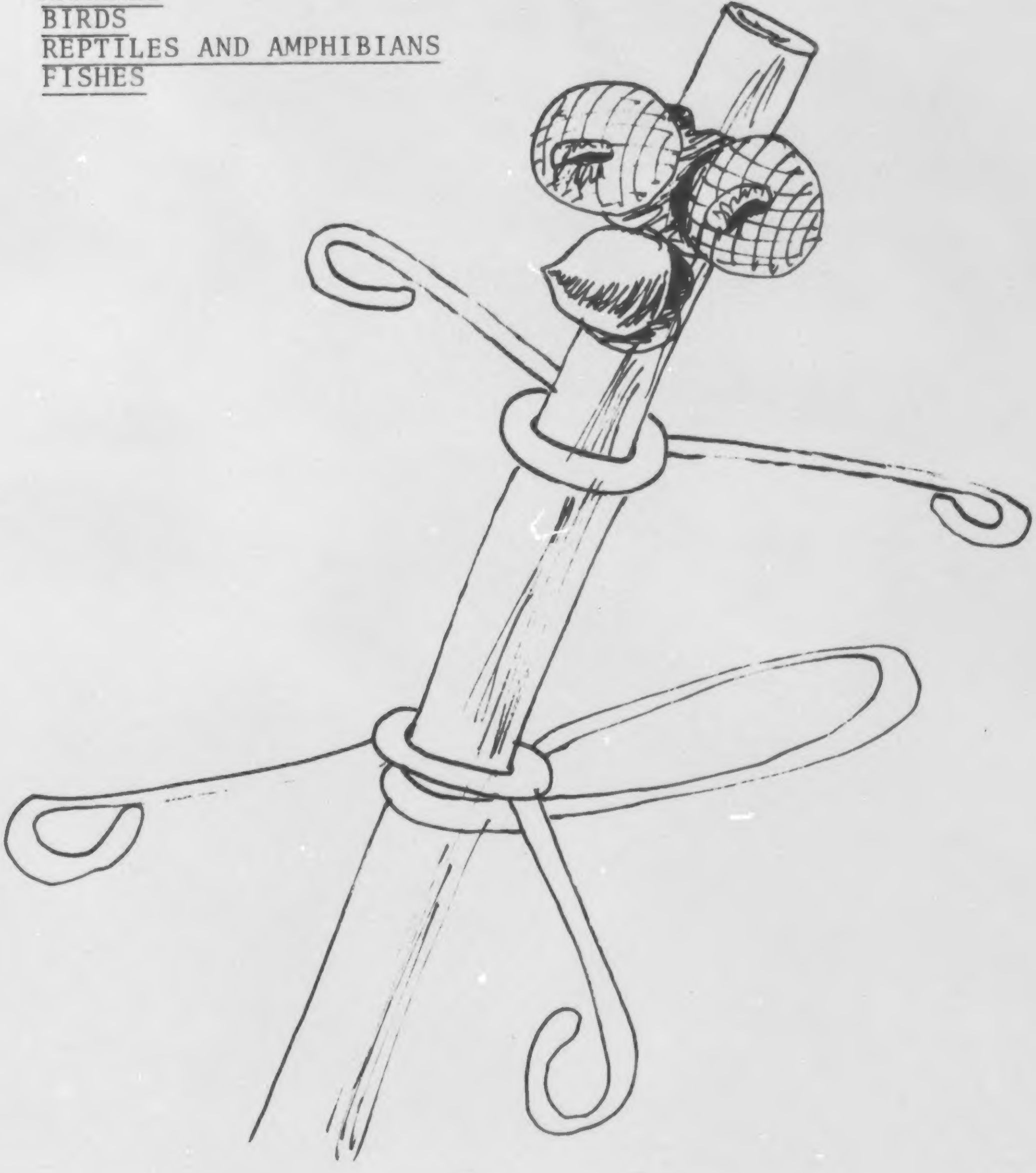
a. (Animals living in a woodland and field habitat.) A housing development is going in you woods. How will this affect you? Where will you go if you have to move?

b. For everyone - which animals in our group are your friends? Where does each animal live? Which are your enemies? Role play a situation or illustrate.

RESOURCES:

Golden Nature Guides:

MAMMALS
BIRDS
REPTILES AND AMPHIBIANS
FISHES



NATURE CONSTRUCTION

51

Next time you go for a walk outside look for similarities between natural things, living or non-living. How many ways is one tree similar to another type of tree? How are you like a tree? You'll be surprised at the lists of similarities you can develop.

OBJECTIVES:

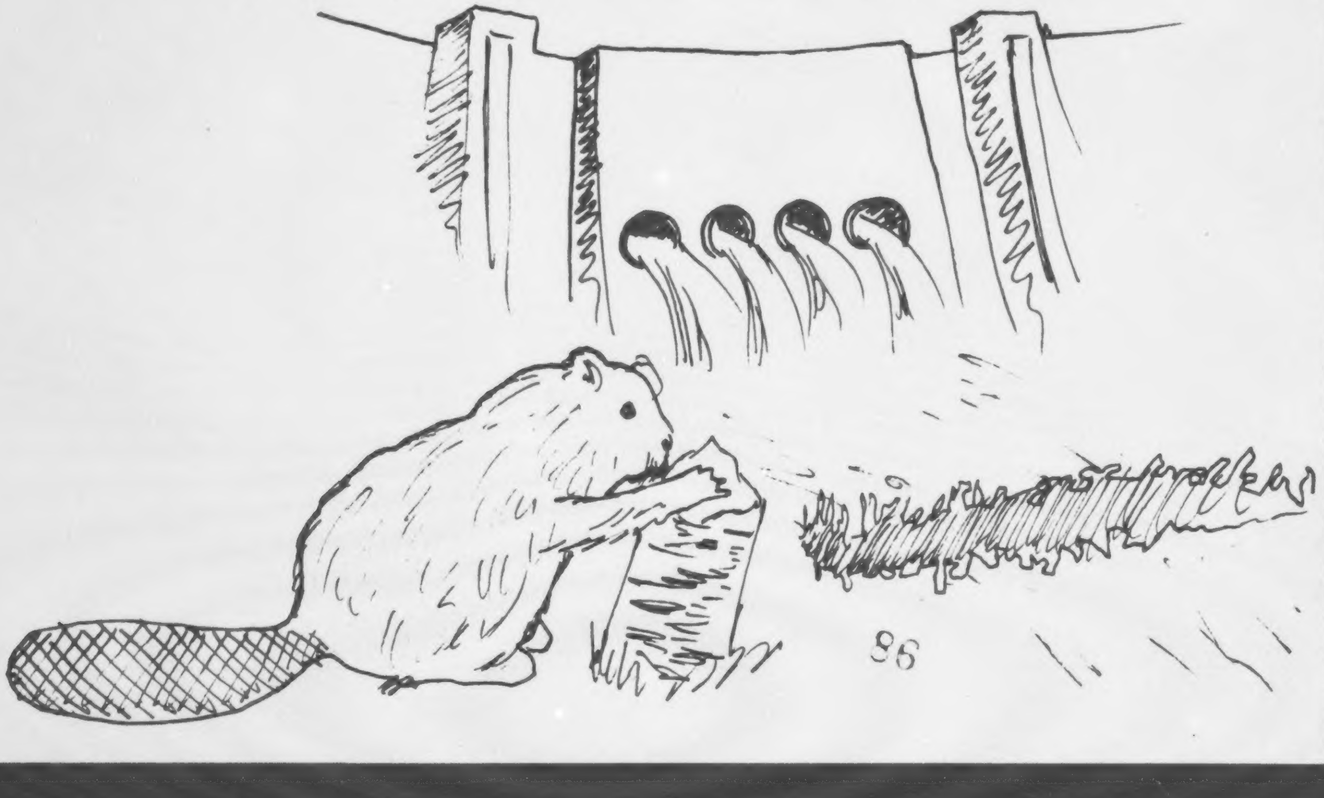
To observe complexity of nature's construction and relate it to human construction.
To develop a better understanding of how humans have adapted nature to protect ourselves as plants and animals have developed their protection.
To reinforce the learning process using similarities rather than differentiantions.

PROCEDURE:

Find natural items. How are they constructed for survival? What natural forces affect the needs of a tree? (Rain, wind, snow, sun, soil). What does a tree do to survive? (Roots, Bark, Leaves). How does a flower survive? What strengthening features can be found on a flower? (Sepals) What do humans use for protection? (Clothes, buildings). How are our stuctures similar to structures in nature?

DISCUSSION AND FOLLOW-UP

Compare needs of various living things.
Compare: Beaver dam/human dam, den/house, bark/clothing fur/feathers, any dwelling/house, bee hive/apartment.
Do natural forces affect our construction practices?
Have we adapted ideas from nature to our own needs?



OUTDOOR COOKING:

FOOD, FIRE & FUN

Firebuilding generally is a rewarding experience for people by itself. Preparing a meal and cooking over the fire can be satisfying and exciting. The participants will have nearly 100% control over their experience.

MATERIALS:

Large can
Some wire
Corrugated cardboard
Candle wax
String

Ingredients for a stew
Dutch oven
Bisquick mix
Matches
Firewood

OBJECTIVES:

To emphasize safety as well as safety concerns for the natural area with outdoor fires.
To provide a positive socialization experience.
To receive satisfaction and knowledge from preparing a meal over an open fire.

PROCEDURE:

1. Fire building contest: First, discuss how to build a fire.
   a. Divide students into groups of 5 or 6 students.
   b. Suspend a string 12 inches off the gound over each fire site.
   c. Goal is to have each group obtain wood and light the fire that burns the string.

2. Fire starters/buddy burners:
   a. Take 1" wide strips of corrugated cardboard and roll into a coil, tie with string and soak for 10-15 seconds in melted candle was.
   b. A Buddy Burner is made by coiling the cardboard in the same way. Place the coil in a tuna fish can and pour melted wax into the can.

3. One Pot Stew:
   a. With a wire and large tin can make a cooking pot.
   b. Add vegetable and meat (cut in small pieces) just covered with water.
   c. Cook over fire until done.

4. Doughboys:
   a. Cook bisquick dough wrapped around a stick.

RELATED ACTIVITIES:

Discuss qualities of various firewood. Relate it to conservation of our natural resources.
Review personal survival techniques in the woods.
Plan an overnight camping trip.

REFERENCES:

OLD-FASHIONED DUTCH OVEN COOKBOOK, Con Holm, The Caxton Printers LTD., Caldwell, Ohio, 1975.

YOUR OWN BOOK OF CAMPCRAFT, Catherine T. Hammett, Pocket Books, 630 Fifth Ave., NYC., 1950.

ROUGHING IT EASY, Dian Thomas, Bringham Young Univ. Press, Provo, Utah, 1975.

FIELDBOOK, Boy Scouts of America, New Brunswick, NY, 1967.

PINE CONE REFLECTIONS FOR HANGING ORNAMENTS, MOBILE, OR SCULPTURE

53

An empty seed case, a pine cone found on the ground, can be used to produce a variety of art forms.

OBJECTIVES:

To introduce the function of a pine cone and which trees they are associated with.

To use a pine cone and a variety of colors to produce a creative form of art.

MATERIALS:

Pine cones - white, red, pitch, and/or scotch pine
Yarn
Scissors

OPTIONAL:

Blunt needles with a large eye
Twigs
Acorn caps
Spruce and hemlock cones

PROCEDURE:

PREPARATION:

A yarn dispenser is a box with holes through which strings of balled yarn are pulled: this prevents being left with a heap of tangled yarns.

1. Instruct students to take an arm's length of three colors, being careful to leave 6" of yarn hanging out of the box. In choosing colors think of some impressive sights of the day: sky, earth, fire, landscape, birds.

2. Decide which way to hold the cone and whether it will be hung or not.

3. Fit a string of yarn under the petals and tie with a square knot, leaving a length for hanging if desired.

4. Now, the yarn is our vehicle for reflection. Explore the spirals with a color. Some students will become independent at this point and others benefit from instruction. Use needles for threading intricate designs. Tie the second color onto the first, using a square knot, to continue the art work. Or, start a succession of threads from the top.

5. The lengths left for hanging may be braided or knotted.

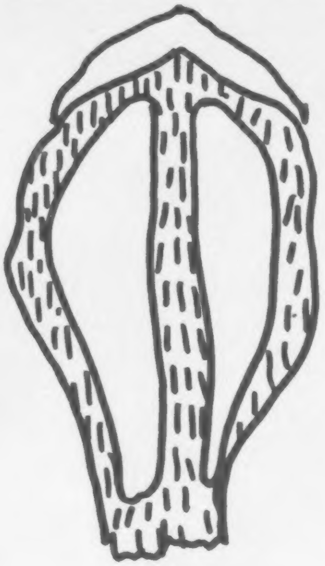
6. This is the basic hanging ornament or sculpture. With the variety of materials suggested as optional, cones explored

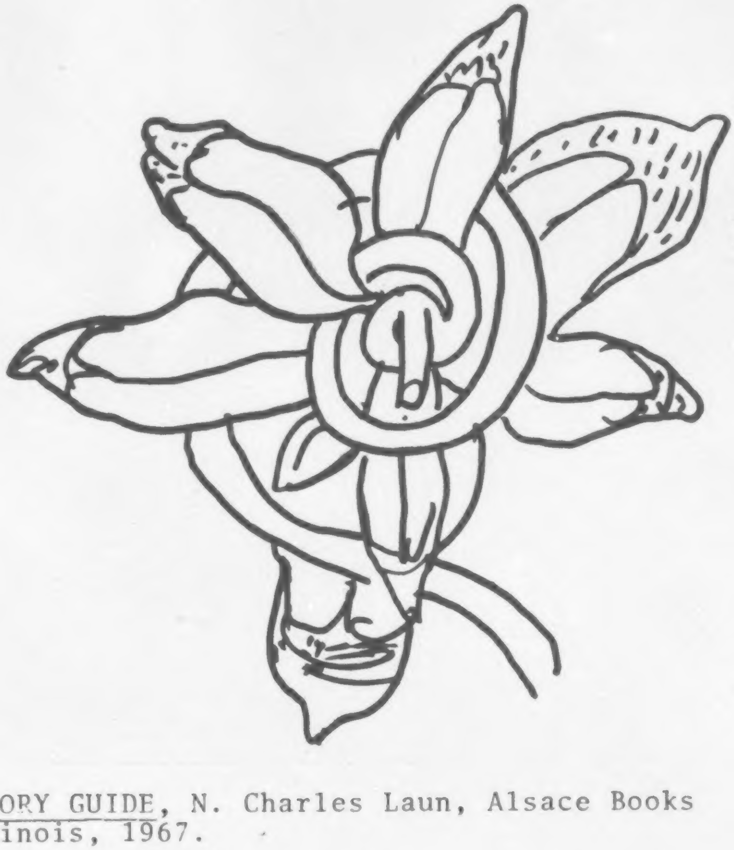
with yarn may be arranged in groups or form parts of mobiles.

NATURE STUDY:

Cones are seed cases created by needle-leaved trees. Have a stock available in the room. If conifers are located on the grounds, cones may be picked up by the class. In both cases, discover the various trees in the area and thence the identity of your cones.

Scales are arranged spirally, (the other name for a cone is a strobile from the Greek strobos, a whirling). Each scale has a vivid or faint pattern: the whole and its parts are esthetically pleasing. Open cones have let out their seeds, two under each scale. Search under the scales for remaining winged seeds. Watch the seeds spiral/shirl to the ground. Closed cones will open if placed on a radiator or in an oven. The resin melts (use a pan) in an oven, glazing the cone to perfection.





RESOURCES:

THE NATURAL HISTORY GUIDE, N. Charles Laun, Alsace Books and Films, Alton, Illinois, 1967.

LEARNING ABOUT NATRUE THROUGH CRAFTS, Virginia W. Musselman, Stackpole Books, Harrisburg, PA. 1967.

PRINTING TECHNIQUES

This activity encourages a lot of experimentation with forms, shapes, textures and colors.

OBJECTIVES:

To introduce varied printing techniques and the tools involved.
To gain an understanding of an art form that will produce a mirrored image.
To utilize and encourage creative expression.

MATERIALS:

I. Paper
Tempera paint

II. Wood blocks 2" x 2" x ¼"
String
Elmers glue
Printing inks - red, blue, yellow, green
Paper

III. Assorted linoleum gouges
Roller (Bryer)
Printing inks - red, blue, yellow, green
Linoleum blocks
Sheet of glass or plexiglass
Printing paper
Block press
Pencil

PROCEDURE:

LEVEL I:
Arrange different colors of tempera in small pools in the middle of the paper. Fold the paper exactly in half - press flat. Unfold immediately and hang to dry.

LEVEL II:
Apply elmers glue to the surface of the block in the same shape you desire your prints to be. Press the string down on to the glue and hold until the glue holds the string in position. Spread ink on glass or plexiglass while block is drying. Spread the ink thin with a roller. Then place the block face down on the ink and press onto the paper. Repeat the process for an interesting print.

LEVEL III:
Plan a design for the print by tracing the linoleum block on a sheet of paper and sketch design on paper. Keep lines simple as they must be carved. Using a pencil, draw the selected design directly on to the block or transfer an original drawing by placing it face down on the block and rubbing it with the

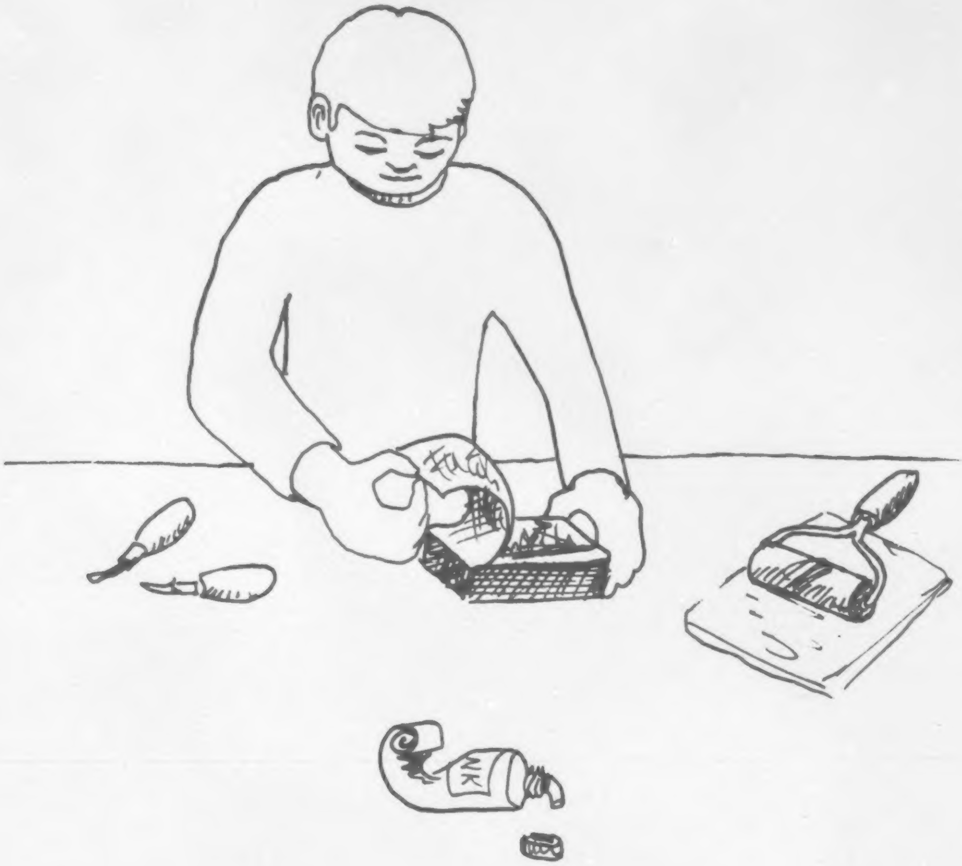
back of a spoon. Cut out the lines and areas using a cutting gouge (for easier cutting, warm the linoleum). Parts that are carved out will print the color of the paper. Ink the block by rolling out printing ink on glass or plexiglass until even. Then roll the brayer (roller) over the block back and forth until it is covered evenly with ink. Place the linoleum block face down on to the paper and apply pressure evenly or use a block press. Peel the print off slowly and hang to dry. Finished prints can be matted.

RELATED ACTIVITIES:

Wax block printing

Soap printing

Vegetable prints



SEASON TO SEASON LEAF COLLECTION

Leaves are all around us. They show us birth, growth and death within a year. This activity starts by collecting leaves before they are "born" and include all stages in between.

OBJECTIVES:

To recognize different species of trees by twigs or leaves.
To explain the process of growth and life.
To utilize a long-term continuing project to encourage perserverance.

MATERIALS:

Poster board (2' X 3')
Wax paper
Magic markers
Glue or stapler
Field guide for trees
Iron
Plain paper
Calendar

PROCEDURE:

Start this project in February or March. Plan with the class to pick twigs and leaves on a set day each week or month. Pick twigs before leaves even start to come out. Then have the children keep a look out for the first sign of swelling buds and new leaves. Assign each child or allow them to choose for themselves, the species of tree they wish to observe.

Twigs and leaves can be pasted directly to poster board by a simple preserving technique as follows:

1. Take pieces of wax paper big enough to overlap leaf edges, and make a sandwich.

2. Place one piece of plain paper on the ironing surface. Place wax paper and leaf sandwich on this. Put another sheet of plain paper on all of these so that no wax paper is showing.

3. Set iron at permanent press setting. When hot, iron the sandwich for approximately 15-30 seconds or until wax is melted and the two sheets fuse. You may want to check this out beforehand as irons and wax paper thickness may differ.

4. Allow to cool completely before handling since hot paper burns hands as an iron will.

5. Preserved leaf can now be stapled or glued on posterboard and labled as to date collected. Leaves can be labeled as to date and location. They can be collected from different trees each time to encourage observations of leaf characteristics.

NOTE: Leaves should be collected more often in early spring due to rapid growth and in mid to late fall due to advancing color changes. In summer, leaves could be collected every 3-4 weeks to illustrate the gradual change.

DISCUSSION QUESTIONS:

FALL LEAVES:

Why do they change color?

What substances cause certain colors in leaves?

How do leaves finally fall off the trees?

Why don't pine trees lose their leaves/needles?

What happens to fallen leaves?

SPRING LEAVES:

What starts leaves to grow in the spring?

Why do trees flower?

Why do trees need leaves?

How do leaves help other animals and birds?

RELATED ACTIVITIES:

Learn Latin names of the trees and their meanings.
Field trips can be expanded to include other plants.
A trip and picnic to the Bartlet Arboritum or a nature center can be a fun learning experience.

RESOURCES:

TREES. GOLDEN NATURE GUIDE, Herbert Zein, Golden Press, NY 1956.

NATURE CRAFTS AND HOBBIES; William Halcourt, G.P. Putnams Sons, New York 1970.

A FIELD GUIDE TO TREES & SHRUBS, George Petrides, Houghten Mifflin Co., Boston 1958.

SHE SELLS SEA SHELLS...

56

Sea shells are an exquisite example of art in nature. Combine this with the art form of a mobile and you have an outstanding display.

OBJECTIVES:

To spark an interest in nature, especially seashore life.
To instill in children an appreciation for decorating their rooms.
To manipulate objects to produce a balanced piece of art.

MATERIALS:

Shells
Fishline (not too thick)
Newspaper
Scissor
Sharp object (such as an awl or leather punch, nail)
Sticks or coat hangers

PROCEDURE:

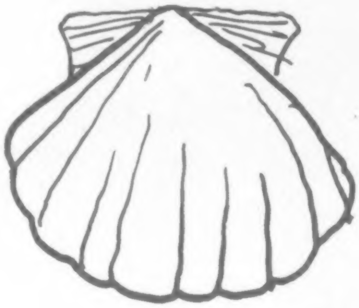
1. Allow students to select approximately 20 shells. Selection may be on the basis of color, size or perhaps a single species. (Scallop shells work particularly well). A small hole is made in the shell by drilling a small nail or a strong needle through the shell with a balled newspaper backing underneath.

2. String shells together tying a know after each shell to hold it in place. Approximately 3 or 4 shells should be attached to 3 or 4 strings.

3. Balance these, the stringed shells are attached to a stick or coat hanger, so that they move easily when in a breeze.

DISCUSSION QUESTIONS:

Where do shells come from?
Why do animals make shells?
Who invented mobiles?



RELATED ACTIVITIES:

Take a trip to the ocean.

Make other types of mobiles.

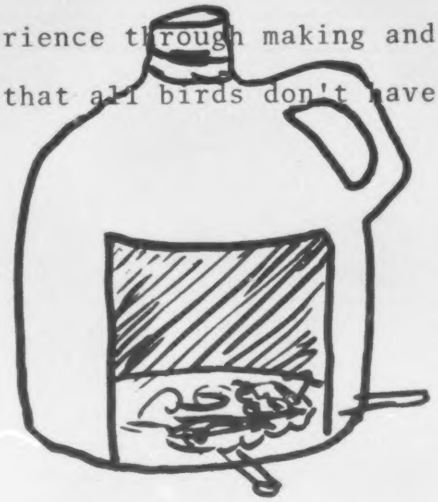
Shell art (decorating mirrors, combs or making pictures with shells.

SIMPLE BIRD FEEDERS YOU CAN MAKE

Birds really liven up a winter scene. Each year more and more people become involved in feeding and learning to identify birds. In order to attract birds, one should set up a number of feeders around the yard. Children and adults can easily make these feeders at home or in the classroom. Here are two types of simple feeders.

OBJECTIVES:

To provide a rewarding experience through making and caring for a bird feeder.
To develop the realization that all birds don't have the same eating habits.



MATERIAL:

- Wire
- Screws
- Brace and Bit
- String
- Knives and Scissors
- Log and Saw
- Plastic milk jugs

PROCEDURE:

For a log feeder; Cut appropriate length • 1-2 feet log. Drill 1¼"- 2½" holes along log. Put screws in at each end and attach a 2 foot sire to the screws.

For a jug feeder; Cut out doors, attach a string to the top of the jug and hang by string.

DISSCUSSION:

What birds are attracted to the feeders?
Does the type of feed attract a variety of birds or a particular breed?
Discuss migration.

RELATED ACTIVITIES:

Chart a graph of the number and type of birds that are seen.
Identify birds with the use of a reference book.

SIMPLE FISHING - DO IT YOURSELF KIT

58

Fishing is a passive activity that can be enjoyed by anyone. A simple fishing rod can be made by following these directions.

OBJECTIVES:

To demonstrate how to improvise to catch fish and to enjoy the sport of fishing.

MATERIAL:

Stick, pole or youn sapling
Fishing line
Fishing hooks or a sharpened bone
Pocket knife
Bait; worm, bread, can, etc.
Lead - screw or metal washed

PROCEDURE:

1. Attach one end of the string to the pole, then tie the other end of the string to the hook.
2. Attach the lead a few inches above the hook. The lead is used for weight to hold the bait on the bottom of the stream bed, where the fish usually feed.
3. Bait the hook with your choice of bait, then cast your line into the stream and hope for the best.

DISCUSS:

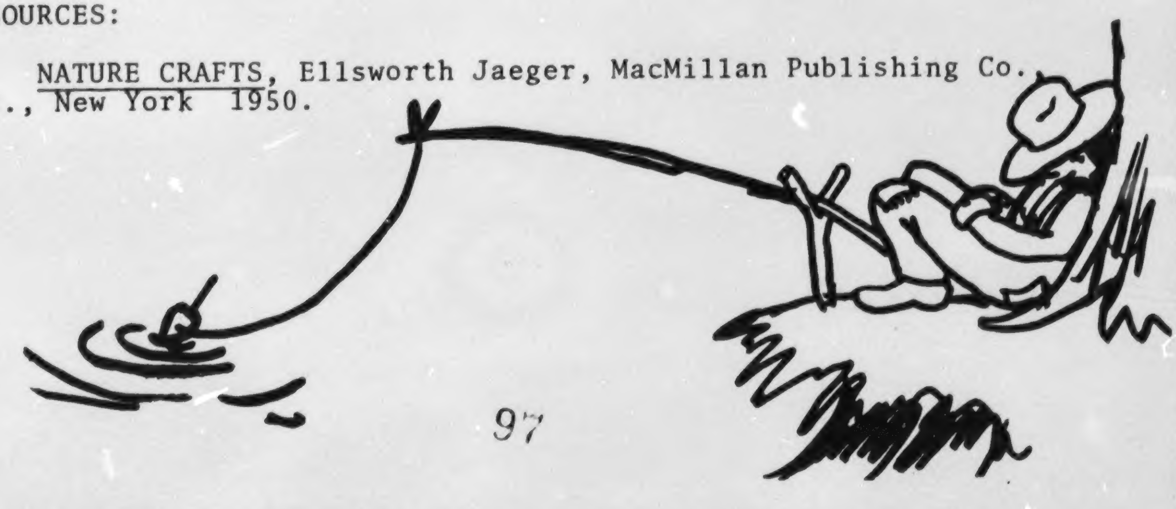
Why are fish at the bottom of the stream?
When is the best time to fish? (Time of day and season)
What do certain types of fish like to eat?

RELATED ACTIVITIES:

Make fish prints; make nature fish hooks.

RESOURCES:

NATURE CRAFTS, Ellsworth Jaeger, MacMillan Publishing Co. Inc., New York 1950.



STAMP IT BEFORE IT "LEAFS"

Trees and other plants can be recognized by categorizing leaves according to shape, size, color, pattern, etc. Leaf prints can be used as a way to study plants as well as creating a craft porject.

OBJECTIVES:

To encourage observation of leaf characteristics.
To make use of a natural object in an art project.
To stimulate creativity.

MATERIALS:

Variety of leaves
Plain paper (white or colored)
Inked stamp pad
Wax paper
Old newspaper
Tempera paint (white or colored) with brush may substitute for ink pad

PROCEDURE:

1. Collect a variety of leaves (stress conservation: use recently fallen leaves rather than defoliating plants)
2. Place the leaf with vein-side down on the ink pad.
3. Place a piece of wax paper over the ink pad. Ink the whole leaf.
4. Remove the leaf from the pad. Place vein-side down on the plain paper.
5. Place newspaper over the leaf and press down on the leaf.
6. Remove the leaf from the paper. Now you have a permanent record of the leaf.

DISCUSSION:

What is a leaf? Do only trees have leaves? What makes one leaf different from another? Why should recently fallen leaves be used rather than freshly picked leaves? In what ways are plants important?

RELATED ACTIVITIES:

Make stationary and use it.
Make paper.
Make charts to aid in learning to count.
Do bark rubbings.

RESOURCES:

THE NEW FIELD BOOK OF NATURE ACTIVITIES & HOBBIES, William Hillcourt, G.P. Putnam's Sons, NY 1950.

TOPS AND WHIRLERS

The construction of toys can be as much fun as playing with them. These tops are simple to make and the children will enjoy the patterns they create. The effect is similar to the spin-art pictures at the amusement parks.

OBJECTIVES:

To construct a simple toy.
To produce and discuss the phenomenon of optical illusions.

MATERIALS:

Cardboard
Cup to draw circles
Scissors
Paints or crayons
String
Small round sticks or pencil ends

PROCEDURE:

TOPS:

1. Draw and cut out a circle of a cardboard using a cup for tracing.

2. REMEMBER - the circles must fit snuggly at the middle. Find the center of the circle and make a small hole. NOTE: Teacher assists in finding the center by folding the pattern of the circle in quarters and making a hole where the folds intersect. Let the children use these to locate the centers of their circles. Instruct the children to point sharp things away from themselves.

3. Draw or paint a pattern on the circle.

4. Glue the stick through the middle of the circle.

WHIRLERS:

1. Make two holes near the center of the painted cardboard circle.

2. Lace with a piece of string to make a loop. Tie loop. (See diagram)

3. Whirl around, pull tightly, relax, pull tightly.

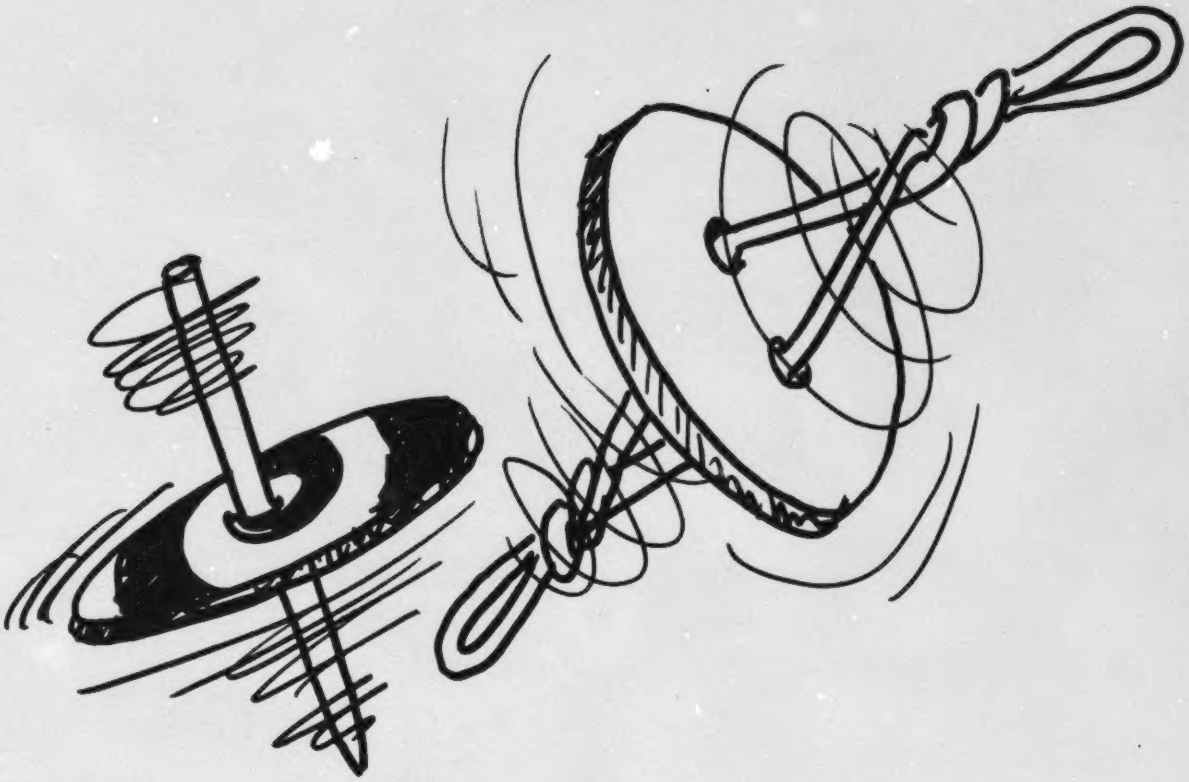
DISCUSSION:

What colors are formed when the tops are in motion?
Why is this?
What is an optical illusion?
What are the types of illusions?

RESOURCES:

FUNCRAFT BOOK OF PAPER FUN, Ottenheimer Publishers, 1976.

AMERICAN FOLK TOYS, HOW TO MAKE THEM, Dick Schnacke, Pensuin Book Inc., Baltimore, Maryland, 1973.

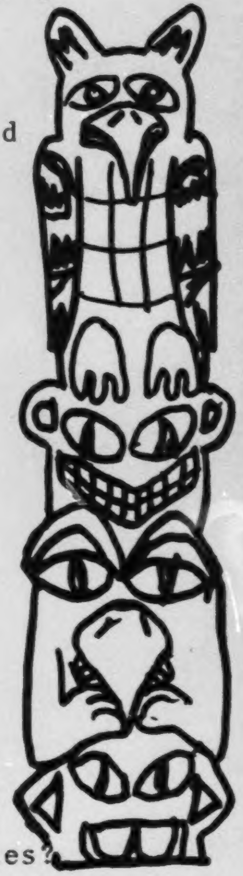


TOTEM POLES

The Indians used Totem Poles as a way of telling about their family lineage.

OBJECTIVES:

To relate the use of Totem Poles to the Indian heritage.
To introduce a craft where by the child can express his heritage and communicate himself to others through the visual mode.



MATERIALS:

Precut foot long 2 X 4 pieces of wood for each child
Paints
Brushes
Cups
Screws for hanging
Newspaper

PROCEDURE:

1. Have an example of a totem pole displayed.
2. Explain the origin of the totem pole.
3. Let them begin. Have the students sketch their figures on the wood before they paint. A chisel and a mallet may be used, depending on the age of the group, to add another dimension.

DISCUSSION QUESTIONS:

What does your Totem Pole say?

Is it a good form of expression?

Which Indians were noted for their use of Totem Poles?

RESOURCES:

THE COMPLETE HOW TO BOOK OF INDIAN CRAFT, W. Ben Hunt, Collier MacMillian Publishers, NY 1973.

WALL HANGINGS

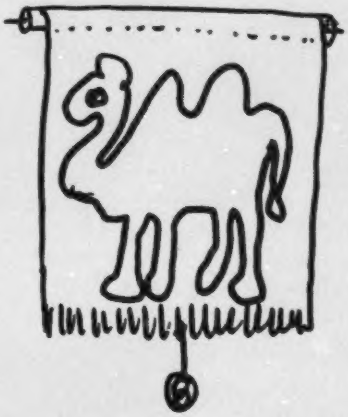
This acitvity affords the child with a means of decorating his/her room. The drawings may be as simple or as complex as the child would like. Also, certain materials are recycled, which instructs the child in the conservation of materials.

OBJECTIVES:

To utilize the imagination in construction of designs.
To strengthen both gross and fine motor coordination.
To create a wall hanging.

MATERIALS:

Old window shade
Pencil
Crayons
Magic marker
Construction paper (various sizes)
Scissors
Water color paints
Masking tape



PROCEDURE:

1. Child draws design on the shade with a pencil until desired shape is obtained.

2. Picture is then colored according to the child's expectations.

3. Shade is hung up using either staples or tape, preferably masking tape.

RELATED ACTIVITIES:

Construction paper may be used instead of paints and magic markers. Child is free to create his own design.

Have the child identify colors.

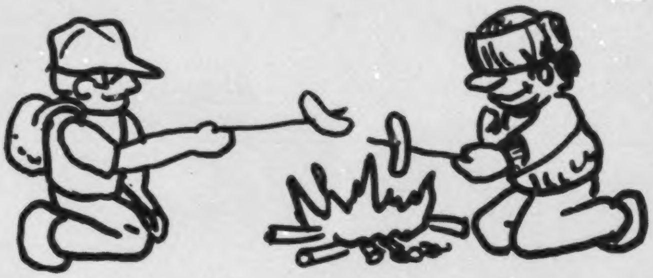
Illustrate how colors can be mixed to create new ones.

Can be used as a cover up for lockers or closet.

WILDERNESS HIKE AND COOK OUT

63

Enjoy the beautiful weather with a short hike through the woods. Discover a secluded spot for an early cookout lunch.



OBJECTIVES:

To give the children a new experience that may have been fearful.
To demonstrate basic campfire skills.
To enjoy each others company on a nice day.
To be aware of wood through smell and sound.

MATERIALS:

Bag lunch
Aluminium foil
Matches
Cups, plastic/paper
Pan

PROCEUDRE:

1. Hike along noticing the day and listening for woodsy noises and smells. Find a unique area and set up for lunch.

2. Gather kindling and circle the pit with stones.

3. Have a child get a pail of water in case of fire spreading and to douse it when they are finished.

4. Show them how to build a tee-pee structure out of sticks to cook the food.

5. Cook your chow and eat it up.

6. Clean up the entire area and leave it like it was before.

8. Discuss:

   Exploring any unknown area can be compared to going into the woods for the first time. Comaprison can be made with other areas that can be fearful to the child. Discuss these.

RELATED ACTIVITIES:

Make a list of the sights, sounds and smell of the day.

Write a group story about the experience.

Learn how to read a compass for your next hike.

RESOURCES:

OLD FASHIONED DUTCH OVEN COOKBOOK, Con Holm, The Caxton Printers LTD., Caldwell, Ohio, 1975.

YOUR OWN BOOK OF CAMPCRAFT, Catherine T. Hammett, Pocket Books, 630 Fifth Ave., NYC., 1950.

ROUGHING IT EASY, Dian Thomas, Bringham Young Univ. Press, Provo, Utah, 1975.

FIELDBOOK, Boy Scouts of America, New Brunswick, NY, 1967

WIND CHIMES - MUSIC TO SOOTHE THE SAVAGE BEAST

64

The sense of sound is a key part of the child's world. He is keenly tuned to auditory stimulation - whether it be the pulsating sounds of Donna Summer, KISS or the tinkling sounds of the wind.

OBJECTIVE:

This activity is designed to help the child become more aware of the sounds of his environment.

MATERIALS:

- Firing clay
- Kiln
- Rolling pins
- Newspaper
- Sticks, twigs, branches
- Cups or cans
- Twine
- Nature objects - weeds, nuts, leaves, shells, etc.
- Plastic bags

PROCEDURE:

1. Take the children out to collect materials to press into clay.
2. Spread newspaper on each table and give out clay.
3. Roll out clay as thinly as possible using rolling pins or thick dowels. Roll away from center of clay to get an even thickness.
4. Make designs by pressing objects into clay or piecing weeds, flowers, leaves on clay and rolling over them with the pin.
5. Remove objects from clay. Weeds, fragments in clay will not hurt since they will burn off during firing.
6. Cut circles from the slab using cups or cans.
7. Make holes near top for twine using a pencil or a drinking straw. Initial each disc.
8. Place in plastic bags to allow slow drying. (If too fast the clay will crack.)
9. Fire in kiln - the art/ceramic teacher may be of help.

Construction of chimes:

1. Cut an equal amount of twine for each disc.
2. Tie through hole.
3. Tie equidistantly on short branch or stick.

4. Hang near window or near air current.

5. Discuss:

   What is clay made from?

   What do the discs remind you of?

   Do you think fossils were made in a similar way?

   Can you identify the plants you found?

   Do they look the same as in the clay?

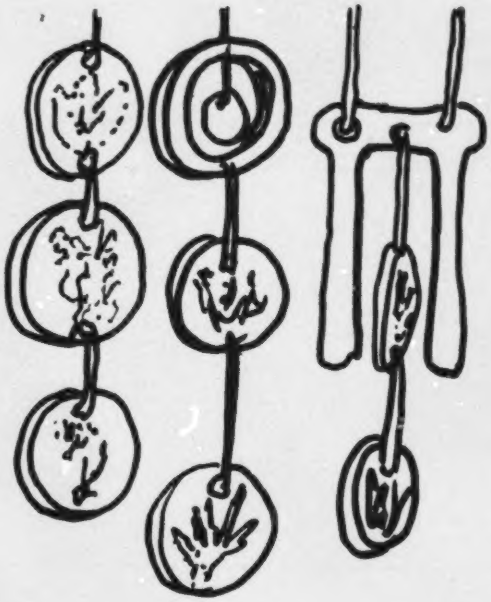
   What happened to the clay after firing?

RELATED ACTIVITIES:

Make wind chimes from different materials, such as, bamboo lengths, pieces of metal. Comapre the sounds.

Use the clay discs in a mobile.

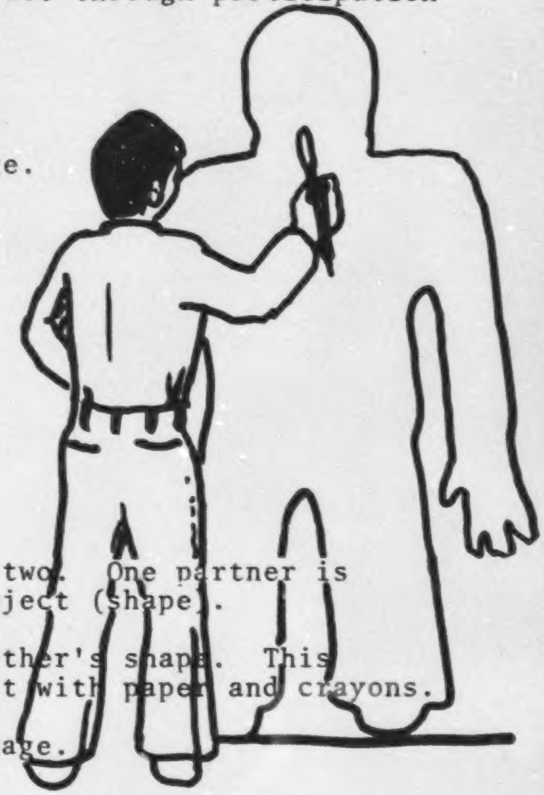
Make jewelry (ie. a pendant) using clay disc, clay beads, feathers, and other natural materials.



BODY IMAGES

65

Body image is basically one's mental picture of his physical self. It is sometimes helpful to the child to make him aware of his body image and personal space through participation in an activity such as this.



OBJECTIVES:

To build confidence.
To establish identity of body image.
To define personal space.
To develop coordination.

MATERIALS:

Paper and markers or crayons
Rulers
Magazines
Glue
Scissors

PROCEDURE:

1. Children are divided into teams of two. One partner is the artist and the other is the subject (shape).

2. Children take turns tracing one another's shape. This activity would most likely work best with paper and crayons.

3. Keep, study and fill in your own image.

4. Discuss:

   How long are you?
   How wide?
   How many arms do you have?
   Who is the tallest?

RELATED ACTIVITIES:

Recreate an image of something else in the classroom, outdoor education, wildlife studies.
Join all body pictures and compare how we are similar and yet different.
Fill in "YOU" - Make a self portrait.
Make a "people" puzzle.
Add on clothes, equipment.
Find pictures in magazines to make "me" collage.

RESOURCES:

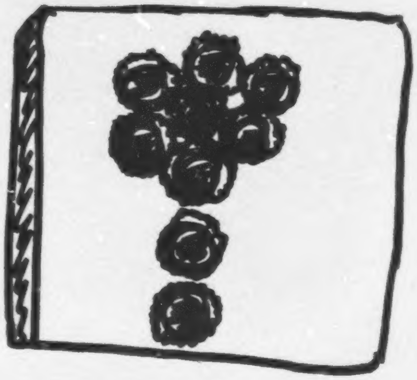
MOVEMENT EXPLORATION AND GAMES FOR THE MENTALLY RETARDED; Hackett, Peek Publication, August 1975.

BOTTLE CAP SCULPTURE

Interesting modern art sculptures can be done with found materials. These can be done with any age child by varying the patterns.

OBJECTIVES:

To develop visual motor coordination.
To develop observation skills.
To foster creativity.



MATERIALS:

Bottle caps
Nails
Pieces of scrap wood (app. 4" square)
Hammer
Paint (optional)
Sandpaper

PROCEDURE:

1. Take a walk to find bottlecaps and scrap wood.
2. Have the children sand the blocks of wood.
3. The children then hammer a nail through the bottle caps to the board, nailing an interesting design. (For younger children draw a design for them and use fewer caps.) Lower or raise the caps for depth design.
4. Discuss:

   By moving the cups did you create a different design?

   Did you observe any other objects around you that can be incorporated in you sculpture?

   What is "sculpture"?

RELATED ACTIVITIES:

Paint the caps.

Glue tissue paper to caps for color and texture.

Add other "found" objects.

Go to a museum to observe and study sculpture.

Exhibit the sculptures made by the students.

BURLAP WEAVING - WALL HANGING 67

This is always a great activity for a rainy day.

OBJECTIVES:

To develop hand/eye motor skills.
To build up patience.
To make a good inexpensive holiday gift or room decoration.

MATERIALS:

Piece of burlap (14" X 17") - no longer
Twigs
Dried flowers, or fresh ones
Bones
Pine needles, pine cones, acorns
Yarn

PROCEDURE:

1. After collecting the above list of "found objects", weave these materials through the burlap. Need not weave in any pattern - skipping threads is perfectly acceptable.

2. Weave a stick close to the top edge of the wall handing. The stick should be approximately 16" long. Tie one end of a piece of yarn to one end of the stick and the other end of yarn to the other end of the stick.

3. Optional: Pull threads out to create a looser weave.

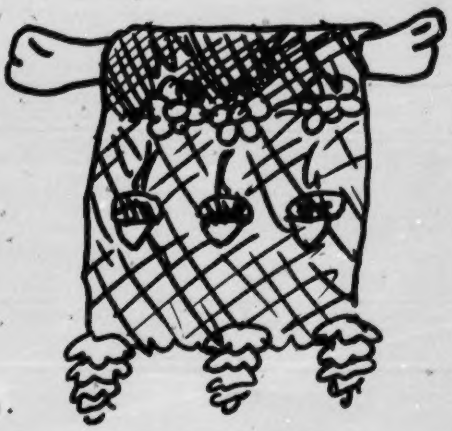
4. Fringe end (bottom) edge of wall hanging. Hang **and** tie pine cones.

5. Discuss:

   What objects are easier to weave?

   What is "woven" fabric?

   How are looms used for weaving?



RELATED ACTIVITIES:

Try macrame.

Have the child try weaving with a loom.

Visit a colonial homestead or village that demonstrates making yarn, dyeing and weaving materials.

CANDLE - DIPPING

This activity is a great follow-up of history lessons of the colonial period. It allows the students to actually participate in the colonial traditions.

OBJECTIVES:

To make a candle.
To discuss colonial life and times.

MATERIALS:

Burner, stove or hot plate
Sauce pan or wide tin can
Several tall, narrow tin cans (tennis ball cans)
Water
Candle wax or paraffin
Candle coloring - if desired (crayons)
Potholders
Work tables
Newspapers
Baking soda for emergencies
Candle wicking or string
"Candle rods", sticks or pencils
Weights: paper clips, nails, or washers
Scissor
Knife
Drying rack
Cardboard squares
Scrap piece of wood, flat and smooth at least the length of a candle

PROCEDURE:

A. Melting the wax

1. Begin to melt wax about 45 min - 1 hour before dipping.
2. Always use a double boiler, Never put wax directly on heat as it is highly flammable.
    a. Put water in saucepan (one that won't be used for cooking) or in a wide tin can. Fill about ½ full.
    b. Place wax in tall, thin can. Broken pieces melt faster than large blocks.
    c. Place wax can in sauce pan of water.
    d. Place sauce pan on burner.
3. As wax melts, add more until liquid wax is about ½ inch from top of can.
4. Check on water level occasionally. Add as needed.
5. Add coloring if desired. Wax crayons, used candle stubs or commercial candle coloring can be used.
6. When melted, reduce heat or remove from heat.

B. Preparing the Wicks

1. Cut 2-3 lengths of string or wick about 2 inches longer than height of wax can.
2. Tie one end of each about 3 inches apart to a "candle rod".

3. Tie a weight to the other end of each wick. (Paper clips work quite well.)

C. Dipping the Candles

1. Spread newspapers over work area.
2. Hold "candle rod" in one hand and cardboard square in the other hand.
3. Dip each wick (separately or, if can is wide enough, collectively) QUICKLY into wax can. Weight should never touch the bottom of the can.
4. As each wick comes out of the wax can, quickly hold cardboard underneath to catch drips.
5. Be sure wicks stay striaght. They can be straightened by gently pulling or by rolling them between hands.
6. After 2-3 dips, cut weight from end of wick. Candle should now be heavy enough to remain straight throughout. (Weights can be reused. Collect them; place in small can in saucepan of water; heat and as wax melts, pour off wax; cut off any string from the weight.)
7. Alternately dip candle in wax and then in cold water dip quickly in wax; let dry in air for count of 20, dip in cold water for a count of 10. Last dip in wax should be air dried only.
   a. Quick dips are best as long dips into hot wax tends to remove layers rather than add them.
   b. 15-25 dips amy be necessary.
8. As melted wax supply in can diminishes, add liquid wax to keep can full (½ inch from the top).

D. After Dipping

1. While candle(s) are still warm (not sticky), gently roll the candle between hands or a flat surface (smooth) with a flat smooth board. This should straighten out any bumps.
2. With heated knife, cut off bottom end to make it flat for candle stick holder.
3. Hang "candle rod" with candles still tied on in a safe place where they can thoroughly air dry. The longer they "age", the longer they'll last while burning.

NOTE: HOT WAX IS DANGEROUS.
Be sure sauce pan handles are well out of the way!!
Wax should always be tended to by an adult!!

RELATED ACTIVITIES:

Read poems/stories about lights, candles.

Write poem/story - "If I were a candle. . .". "If there were no lights, the world would be like. . .", etc.

Discuss uses of lights/candles in the United States, customs in the world, religions, etc., in regard to the use of candles.

History of lighting.

Compare the weight of the candles to the amount of wax necessary to melt in order to hand-dip them.

Study candle-powers, watts, etc.

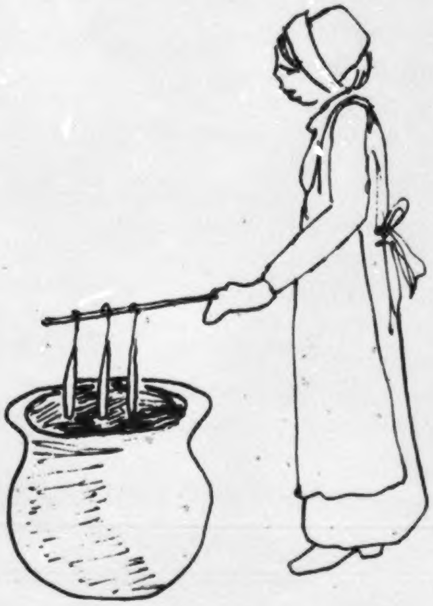
REFERENCES:

MAKING HOMEMADE SOAPS & CANDLES, Phyllis Hobson, Charlotte, VT; Garden Way Publishing, 1974.

HOME LIFE IN COLONIAL DAYS, Alice Morse Earle, Stockbridge, Mass; The Berkshire Traveller Press. 1974.

"LIKE IT WAS" BICENTENNIAL GAMES 'N FUN HANDBOOK, Adah Parker Strobell, Washington, D.C., Acropolis Books LTD., 1975.

CANDLE-MAKING, Little Craft Series Book.



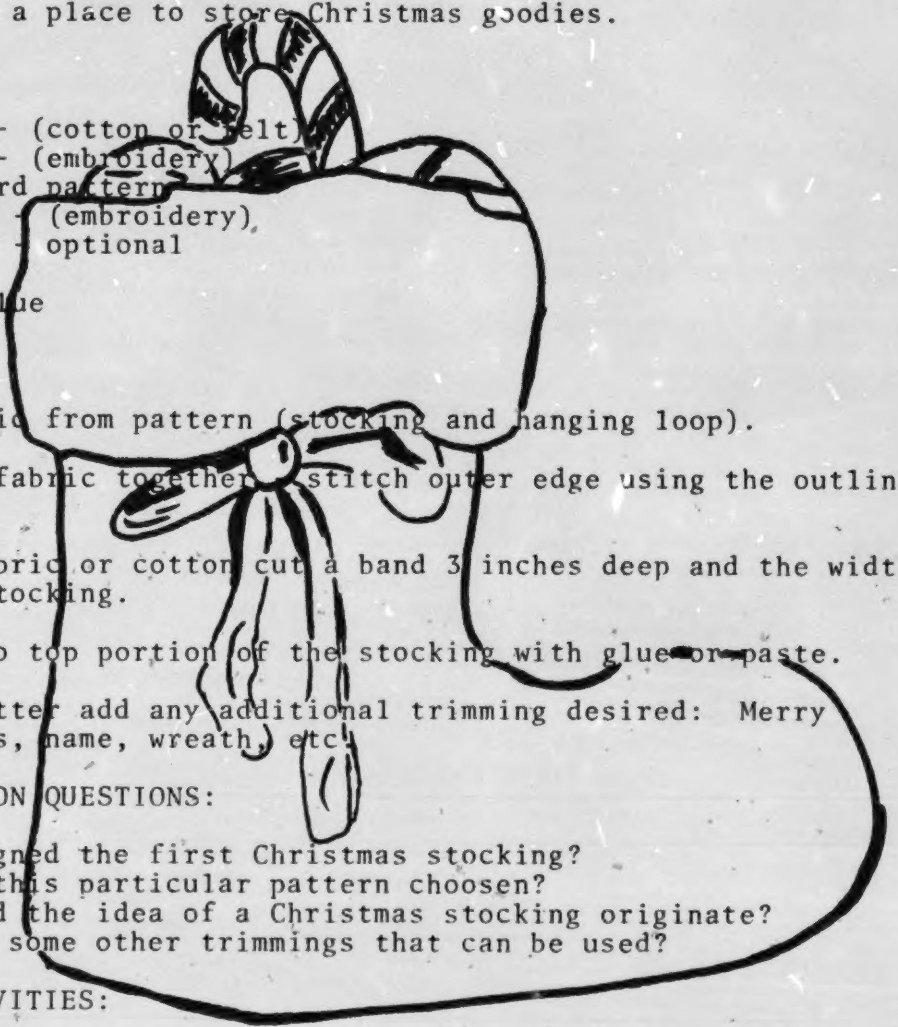
CHRISTMAS STOCKING

69

Christmas stockings can be made and hung in observance of the holiday seasons.

OBJECTIVES:

To make a Christmas Stocking.
To enlighten children to the season's spirit.
To make a place to store Christmas goodies.



MATERIALS:

Fabric - (cotton or felt)
Thread - (embroidery)
Cardboard pattern
Needles - (embroidery)
Glitter - optional
Cotton
Paste/glue

PROCEDURE:

1. Cut fabric from pattern (stocking and hanging loop).

2. Keeping fabric together, stitch outer edge using the outline stitch.

3. Using fabric or cotton cut a band 3 inches deep and the width of the stocking.

4. Attach to top portion of the stocking with glue or paste.

5. With glitter add any additional trimming desired: Merry Christmas, name, wreath, etc.

6. DISCUSSION QUESTIONS:

Who designed the first Christmas stocking?
Why was this particular pattern choosen?
Where did the idea of a Christmas stocking originate?
What are some other trimmings that can be used?

RELATED ACTIVITIES:

Learn how Christmas is celebrated in foreign countries.

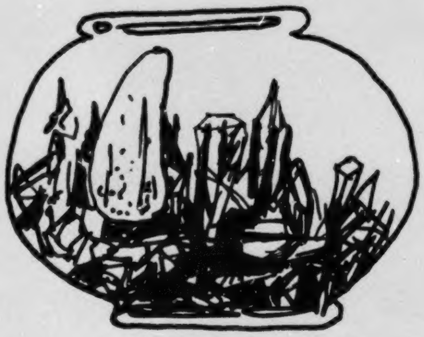
Try to simulate one countrys traditions for your Christmas party. (food, ornaments, music)

CRYSTAL GARDEN

Create your very own rock garden in just 2 hours - crystals will form in the prepared solution while you investigate what they are and how they form.

OBJECTIVES:

To demonstrate crystalization.
To initiate scientific inquiries.



MATERIALS:

Coal and/or rock
Food coloring
Two bowls
6 Tablespoons Salt
6 Tablespoons Blueing/Detergent
1 Tablespoon Amonia
6 Tablespoons Water

PROCEDURE:

1. Take coal or rock and place into a bowl.

2. In another bowl, add the above ingredients and mix.

3. Pour the solution over the coal.

4. Add food coloring to coal (as much as desired).

5. Set aside for 2 hours - crystalization will occure and will last for 2/3 days.

NOTE: Some of the ingredients are harmful - a quick word of caution to all involved should be given.

6. Discussion questions:

Are the crystals the color of the food coloring?
How rapidly do they grow?
What is a chemical reaction?
What happens after 2 days?

7. Graph the growth of the crystals.

RELATED ACTIVITIES:

Do other experiemnts that involve crystalization (such as making rock candy).

Other science experiments that have an element of magic could be incorporated into your science program.

DECOUPAGE, SIMPLE AND COMPLEX 71

Decoupage has proved to be a very effective medium for therapy. A minimal amount of skill is required. The activity can be as simple as the coordinator chooses. The activity involves cutting pictures, staining boards of various sizes, placing pictures on boards using "modpodge".

OBJECTIVES:

To produce a product suitable to be give as a gift.
To learn how to follow simple instructions.
To strengthen manual dexterity through cutting and glueing.

MATERIALS:

Pictures from magazines, old calendars, etc.
Modpodge - Elmer's glue (diluted) may be used in place
Scissors
Various sizes of wood - ranging form 2 X 2 to 4 X 8
Wood stain
Brillo, snadpaper
Old cloth, preferably cotton
Candles

PROCEDURE:

1. The board should be sanded, so that all rough edges are removed.

2. Apply wood stain using a cloth and let dry.

3. Pick out pictures and cut to desired shapes.

4. Apply a thin coat of Modpodge to board and allow to dry.

5. Apply a second coat.

6. Place the picture on the board immediately. Allow to dry.

7. Several more coats of Modpodge are then applied, allowing fifteen minutes between each coat for drying.

RELATED ACTIVITIES:

Various wood cuttings may be used as a replacement for the wood.
The edges of the pictures may be singed using a candle, to create a different finished product.
Cigar boxes or shoe boxes decorated with personalized themes make a great jewelry box for gifts!!

ETHNIC COOKING

Ethnic cooking adds spices to the class; It can be an introduction to cultural differences and similarities.

OBJECTIVE:

To introduce the child to different cultures and customs while also exploring his/her own ethnic background.

MATERIALS:

Leaflets
Maps
Pictures
Books
If cooking - all ingrediants
Stove or hot plate
Cooking utensils

PROCEDURE:

1. Decide which country is to be studied. Prepare a few weeks in advance. Allow time for delivery of information, food order and additional research.

2. Disscuss the country and give the child some information - location, population, customs, foods and preparation. Music from that area is fun and adds flavor.

3. Children prepare food by following the posted instructions, ciik, smaple and compare to other customs.

4. DISCUSS:

How is this food similar to what you usually eat?

How is it different?

What spices are used?

What are the country's customs?

Are they similar/different?

What is your ethnic background?

RELATED ACTIVITIES:

Select and prepare something from another country.

Learn a folk dance. Gather recipes from the children's family.

HMMMMMMM........SMELLS GOOD!!

The angels were searching for a tree to be a symbol of Christmas. They chose the fir because of its fragrance, its evergreen needles and its branches stretching towards heaven.

OBJECTIVES:

To make a potpourri and put it in decorations they have already made.
To teach basic fractions and measurement.

MATERIALS:

Decorations:
Cardboard patterns
Fabric (½yd/ornament)
Pinking shears
Sewing machine or needle & thread
Iron
Yarn (optional)

Potpourri:
1 qt. fir needles
1 cup dried citrus peels (see below)
1 cup whole rosemary
½ cup dried whole basil
2 to 4 by leaves, crumbled
2 cups coarse (kosher-type) salt

PROCEDURE:

Decorations:

1. Cut cardboard patterns for ornaments. Simple shapes with just a few lines are best; stocking, star, tree, circle, etc.

2. Fold material and place patterns on it. Trace patterns with a pen or pencil. Cut patterns out with pinking shears.

3. Cut fabric strips for loops; approx. 4" long and 1" wide. Fold strips in half and iron. Yarn can also be used.

4. Put fabric peices together, right side facing in. Sew by machine or by hand, 3/8" from edges, around the pattern leaving 1" opening. Turn right side out. (You can leave the ornament unturned, have material rightside facing out when sewing.)

5. Pour approximately 1 tsp. potpourri in each ornament. Make a loop with folded fabric strip (or use yarn), inset two ends in opening and finish sewing opening closed.

Potpourri:
Citrus peels: remove membranes, cut into strips and dry in oven or warm place until crisp and brittle. Store in airtight container.

1. Mix all ingredients together. Mix can be stored in plastic bag or airtight container until ready for use.

RELATED ACTIVITIES:

Social Studies:

Christmas customs from various countries can be discussed.

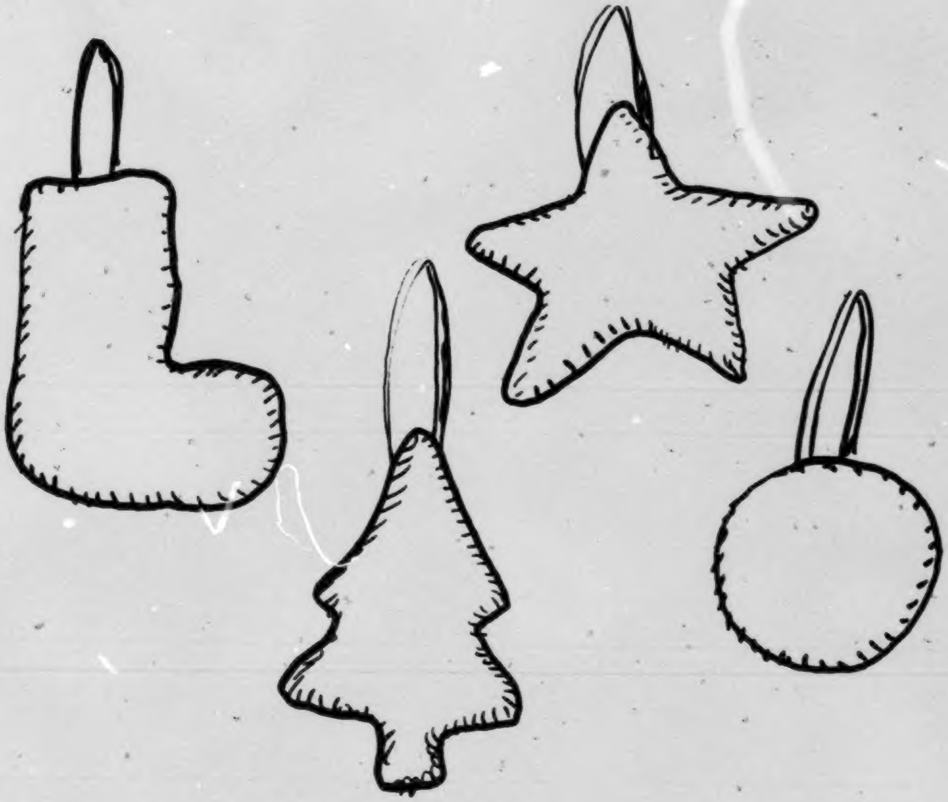
Children could write about their own family customs and celebrations.

Math:

Children can be asked to figure out how much fabric would be needed for a class to do ornaments.

The recipe for the potpourri can be halved or doubled and the children can figure out the correct measurements.

Children can be blindfolded and then asked to describe the various smells in the potpourri.



HOLIDAY DECORATIONS

The holiday season is the time when all children get caught up in the excitement of the winter holidays. Channel this energy into a learning activity by making decorations with themes.

OBJECTIVES:

To make ornaments with a theme - endangered animals, sunny Spain, transportation, Civil War, etc.

MATERIALS:

Styrofoam shapes or individual sized cereal boxes
Pins
Glue
Scissors
Ribbon, sequins beads, etc.
Magazine pictures, bubble gum cards, etc.

PROCEDURE:

1. Arrange children in small working clusters to facilitate sharing of materials. Distribure materials.
2. Ask children to think of a subject - it might be something they are studying or have an interest in.
3. Cut pictures from magazines and cut to fit shape.
4. Cover all exposed areas of shape - pin or glue on.
5. Add on beads, sequins, ribbons, etc.
6. Attach ribbon loop to box or shape and hang from wreath, tree, ceiling, etc.

DISCUSSION QUESTIONS:

What holidays are celebrated during the winter seasons?
How are they celebrated?
In our country? In other cultures?
How did they originate?

RELATED ACTIVITIES:

These decorations can be made for any seasonal holiday. The themes can be used in social studies or languages or art.
A larger box can display book reports or/and illustrations.
Make mobiles to decorate classrooms or your home.

INDIAN BEADWORK

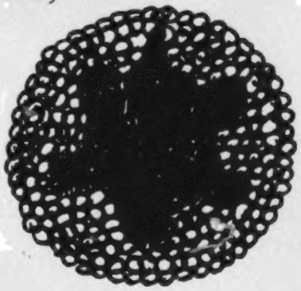
Holidays tend to get muddled in commercialism. Thanksgiving is a holiday that becomes associated with just eating. This is the opportune time to present an activity unit on the American Indian and their contributions. Sometimes the children are unaware of the story underlying Thanksgiving.

OBJECTIVES:

Through participation in this activity the child will engage in: color recognition, fine motor coordination, eye-hand coordination, cultural enrichment, a method of enhancing beauty through the Indians use of colorful beads.

MATERIALS:

Looms (constructed of nails, thread, board)
Bead craft weaving thread
Various colored beads
Large wooden beads
Scissor
Beading needles
Small empty jars
Specific table



PROCEDURE:

1. Display materials on large table.
2. Introduce them to child and show completed Indian pieces.
3. Explain threading.
4. Encourage creativity by letting the child select method and pattern.
5. DISCUSS:

What did Indians use beads for?

How did they make them?

What kind of story did it tell?

How were they used for ceremonial purposes?

RELATED ACTIVITIES:

Have a craft fair.

Put on a play about Thanksgiving.

Dress up like Indians.

Build a Tee-Pee.

INK DOODLE PICTURE -OR- CATCH THAT BLOT

76

Ink making: Until recently, the making of ink was a household craft similar to candle dipping and homemade soap. Egyptian and Chinese documents written in ink 5,000 years ago can still be read. Throughout the Middle Ages the monasteries made their own black, red and gold inks for manuscript copying and decoration.

OBJECTIVES:

To make ink.
To illustrate our dependence on conveniences.
To increase the use of the imagination.

MATERIALS:

Walnut shells
Water
Saucepan (source of heat)
Hammer
Salt
Vinegar
Cheesecloth
Jar
feathers - or art pens
pen tips
Paper & pencils

PROCEDURE:

Ink:
1. Gather walnut shells.

2. crush several empty shells into small pieces.

3. In a saucepan, cover the shells with boiling water and simmer until liquid is very dark.

4. Add some salt and vinegar to set the color.

5. Strain the ink through cheesecloth into a jar.

Doodle Designs:
1. Have children cover a piece of paper with lines drawn in any continuous fashion. The more squiggly the better!

2. Have child look for a shape in his drawing. Abstract designs can also be used.

3. Outline the shapes with the homemade ink . . . some areas may be colored in.

Variation: after finding a shape in own doodle, children can repeat exercise #1 and exchange appers to find shapes in each others doodles.

Catch that Blot:
1. On a piece of paper place a few drops of ink.

2. Fold the paper in half and rub.

3. Open to see the design you have created.

4. Let dry.

DISCUSSION QUESTIONS:

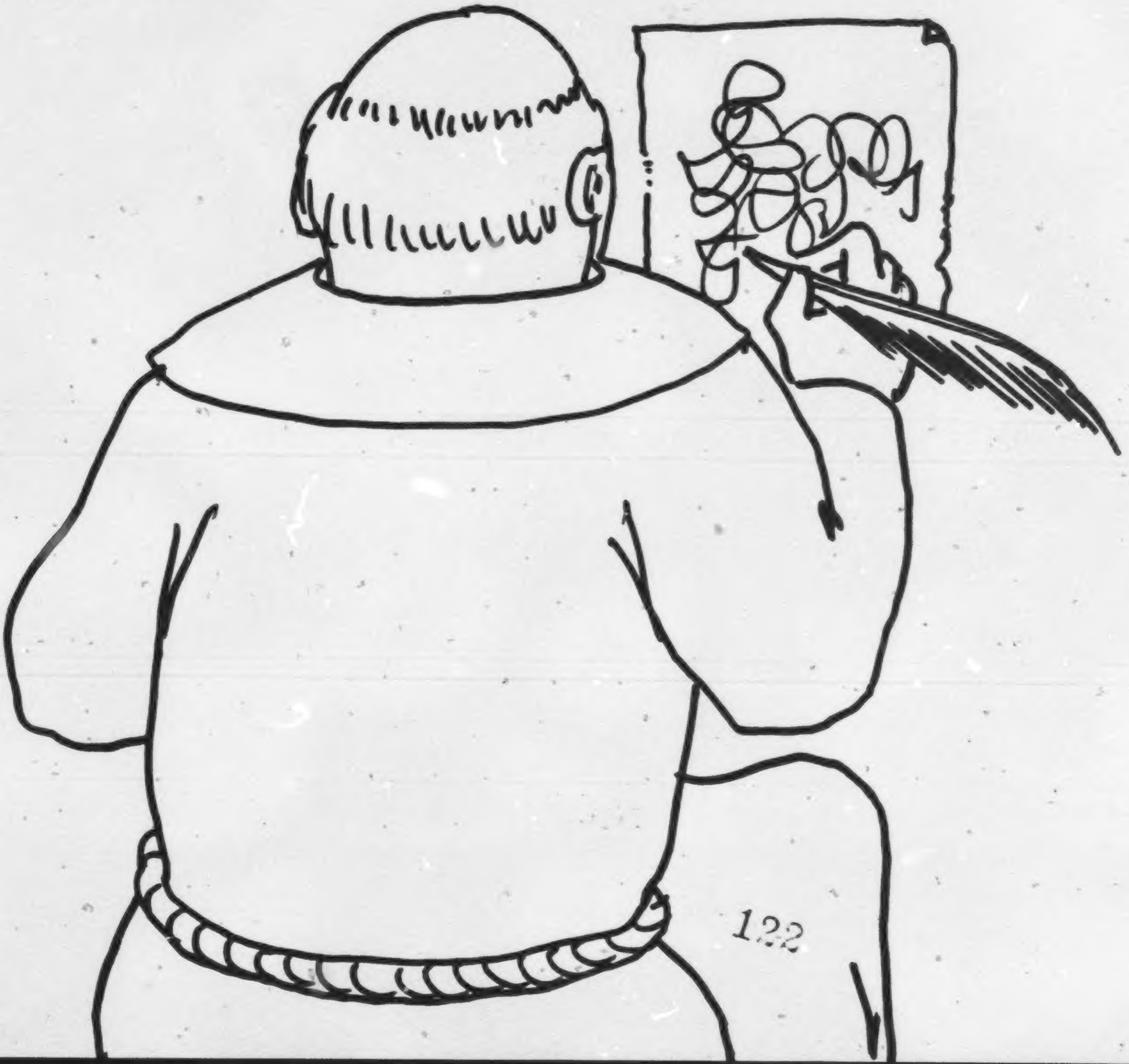
Are there other ways to use ink?
Are there other ways to make ink?
What other things did the colonists make in their homes?

RELATED ACTIVITIES:

Ink making can accompany a unit on the Colonial Period or introduce the history of printing.

RESOURCES:

MAKING THINGS, Anne Weisman, Boston, Little, Brown, and Co. 1973.



IT'S IN PERSPECTIVE!!!

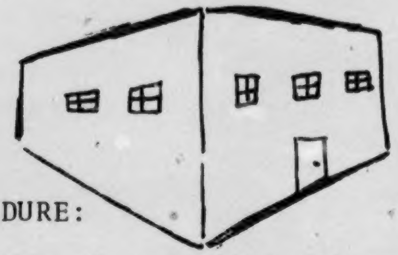
Is it true that roads actually converge or is it just our eyes playing a trick on us. Let's find out.

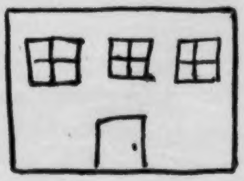
OBJECTIVES:

To demonstrate perspective in art.
To help students with their observational skills.

MATERIALS:

Pencils, chalk or charcoal
Dark paper (construction)
Rulers
A large book
A large picture of a street with a building in foreground done in perspective (Picture #1)
A large picture of the same building done from a frontal position (Picture # 2)





PROCEDURE:

1. Show picture #2 to the students. Have the students identify what they are looking at.

2. Show picture #1 to the students. Have the students discuss the difference between the way the two pictures look.

3. Place a large book on the table open wide standing lengthwise.

4. Have the students draw a picture of the book from different angles.

5. Turn the drawing of the book into buildings by adding windows, doors, chimneys, etc.

6. DISCUSS:

Which lines have to be parallel?

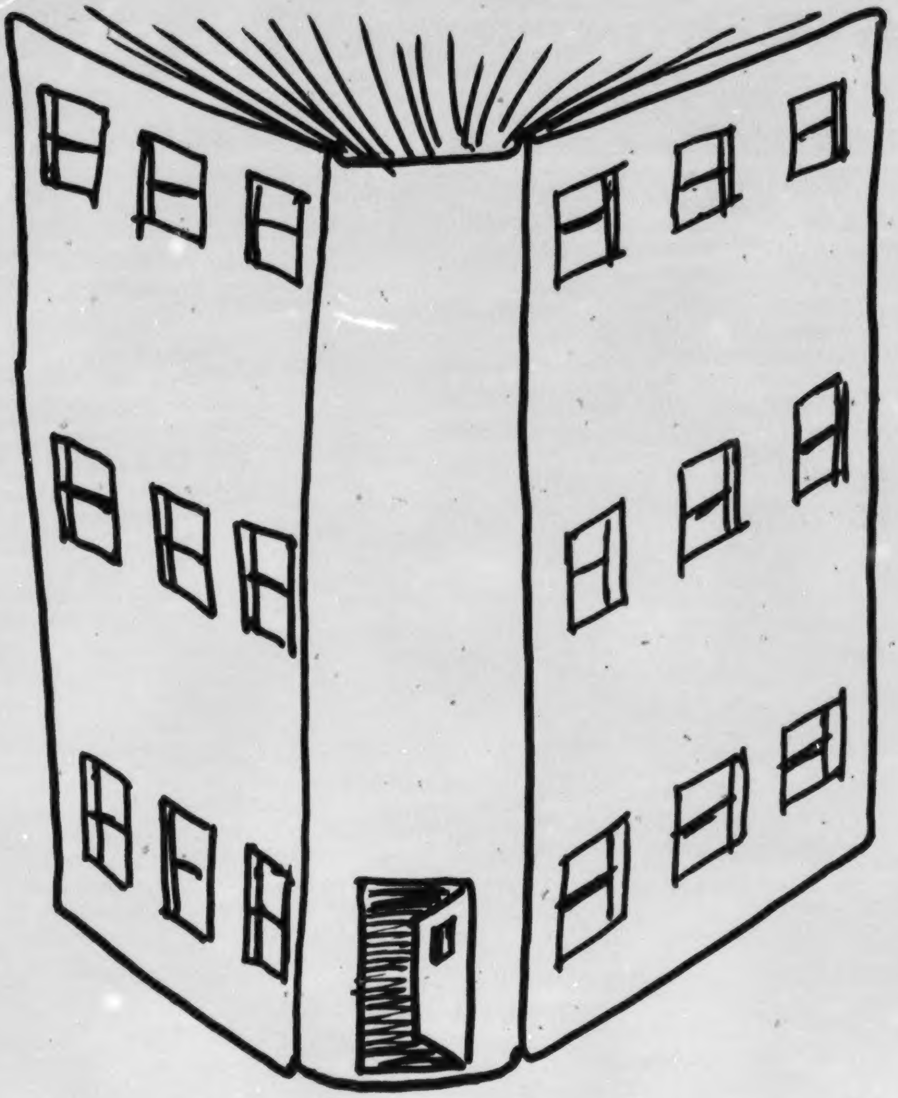
Are the lines of equal length?

Which way are the lines going?

RELATED ACTIVITIES:

Visit an art gallery that has a large selection of the stages of art. Compare the artists' perspective and interpretations.

Have the class duplicate one of the methods such as cubism.



LATCH HOOK RUG

Hooking rugs is an acitvity that requires little to no strenous work or complicated instruction. This activity can basically be followed from various color schemes designed on the canvas. It is a very relaxing activity suitable for all age levels.

OBJECTIVES:

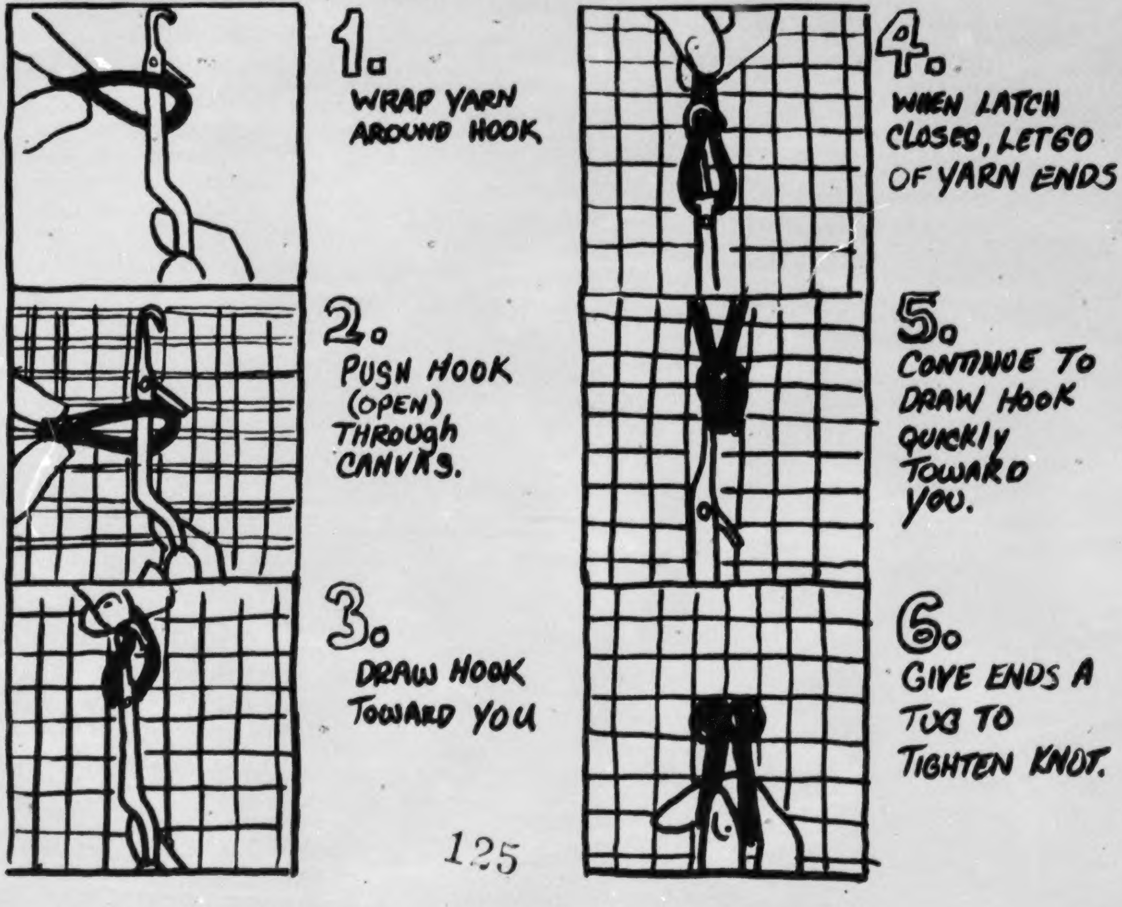
To develop hand-eye coordination.
To create a rug.
To develop a life-time craft.

MATERIALS:

Mesh canvas
Latch hook
Yarn
Magic markers if creating your own design
Tape for the outer edges of the canvas

PROCEDURE:

1. Cut canvas to the desired length
2. Tape all the edges.
3. Count the mesh holes to help center the design.
4. Draw the design.
5. Follow the diagrams below.


1. WRAP YARN AROUND HOOK
2. PUSH HOOK (OPEN) THROUGH CANVAS.
3. DRAW HOOK TOWARD YOU
4. WHEN LATCH CLOSES, LETGO OF YARN ENDS
5. CONTINUE TO DRAW HOOK QUICKLY TOWARD YOU.
6. GIVE ENDS A TUG TO TIGHTEN KNOT.

6. Discussion Questions;

Did you find the activity enjoyable?

Were you able to master working with the hook?

Did you find the activity relaxing?

Where do we get yarn (wool)?

RELATED ACTIVITIES:

Design a more complicated project such as a wall hanging.

Spin you own yarn as the colonists did.

RESOURCES:

Visit your local craft store for more details.

MAKING A WITCH

79

Being able to make your own witch from paper is interesting and exciting particularly at Halloween time.

OBJECTIVES:

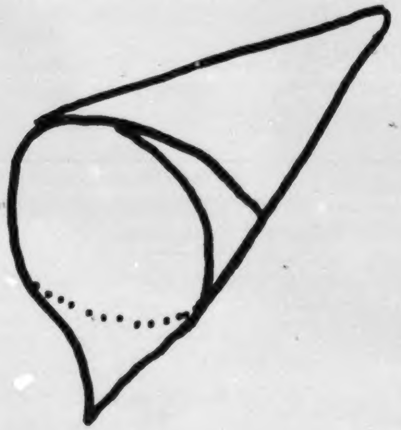
To make a craft which provides enjoyment.
To illustrate color differentiation.
To illustrate shape differentiation.
To stimulate discussion and excitement about Halloween.

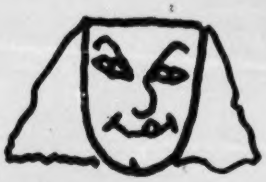
MATERIALS:

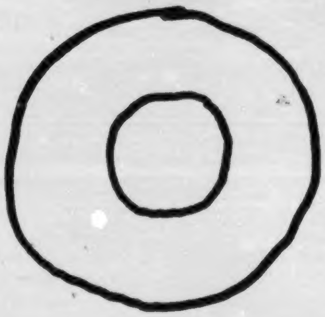
Crayons
Colored Paper
Scissors
Glue

PROCEDURE:

1. Make a paper cone. Cut the end off so the bottom is level.
2. Draw the face on a piece of plain paper and glue on the cone.
3. Cut a circle for the witch's hat. Cut a hole in the center, place and glue on the top of the ocne.
4. To make the cloak, glue a strip of paper around the neck so the upper corners meet at the front.
5. Draw in the hands so they stick out from the cloak.
6. Roll a piece of paper for the broomstick and fray the end. Insert it in the cloak.
7. Use for a table centerpiece for your Halloween Party.







8. DISCUSS:

What is the origin of Halloween?

How did ghosts, goblins and witches become associated with Halloween?

Is this a holiday throughout the world?

RELATED ACTIVITIES:

Go Trick or Treating.

Read a scarey Halloween stroy.

Write a Halloween poem.

Tape record a scarey story with errie sound effects.

RESOURCES:

WORKING WITH PAPER, Franklin Watts, Inc., 1971.

MAKING RECYCLED PAPER

We see products made from recycled paper more and more today. What does this mean to you, me, or a child? A good activity that is inexpensive and fun to make is your own stationary from bits of paper that are discarded.

OBJECTIVES:

To demonstrate how recycled paper products are made.
To enlighten children to the purpose and need for finding new ways fo conservation.

MATERIALS:

Sink
Scraps of paper
Staple gun
Newspaper
Old iron
Blender or egg beater
Dishpan
A piece of 10 X 6 screen stapled to a frame
A frame of 1 X 1 trim
1 X 1 trim of the same size
Weeds
Onion skins
Pine needles
Rose petals

PROCEDURE:

1. Rip paper into small pieces.
2. Put them into the blender with water. (or use a dishpan)
3. Add a handful of onion skins.
4. Turn on or beat until it turns into a slurry.
5. Pour over screen and frame in dishpan.
6. Lift up and drain so excess water passes through the screen.
7. Turn over onto the newspaper.
8. Put another few sheets of paper on top to absorb excess water.
9. Iron it dry, this takes time (book pressure overnight also works.)
10. Your ready to type or write a message on it!!

The onion skins give the paper a transparent effect; pine needles, herbs, rose petals give it a pleasant fragrance; weeds such a pampos grass give it texture.

11. DISCUSS:

How can people benefit from recycled materials?

Where does paper come from?

Is the process similar?

RELATED ACTIVITIES:

Children can assume historical identities and write letters using quill and ink (ie. letter from George Washington to his troops.)

Visit a paper mill.

Start a recycling center.

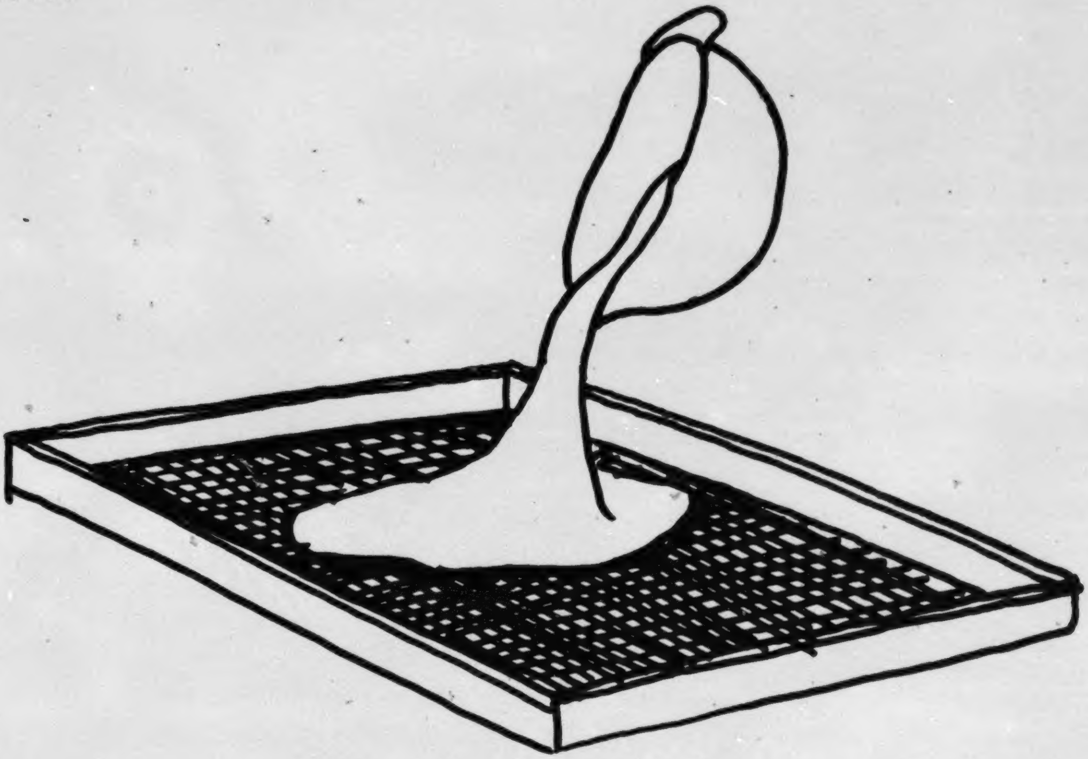
Visit a company that makes paper and one that recycles it.

Plant a tree.

Do origami.

RESOURCES:

MAKING THINGS, Ann Wiseman, Boston, Little, Brown and Co. 1973.



MAKING SANDALS FROM CARDBOARD **81**

Making sandals from cardboard for oneself or as a gift is fun.

OBJECTIVES:

To create a gift for someone or for oneself.
To introduce and experience the craft of sandal making.
To utilize measurement skills.
To work with sharp tools in a safe manner.

MATERIALS:

Cardboard
4 one half inch wide cotton
Streamers, 12-18 inches long
Sharp object to puncture hole in cardboard
Ruler
Chalk
Scissors

PROCEDURE:

1. Place your right foot on the cardboard and trace around it.
2. Cut it out. Trace your left foot and cut it out.
3. Puncture both cardboards that you cut out at the approximately positioned as shown on the picture.
4. Measure and chalk in lines. Cut streamers from any old cotton material.
5. Run one streamer through the four holes near the toes.
6. Run another streamer through the two holes at the heal and wind it around your leg.
7. Your sandals are now ready to wear.

RELATED ACTIVITIES:

Learn about other kinds of shoes and boots and how they are made.

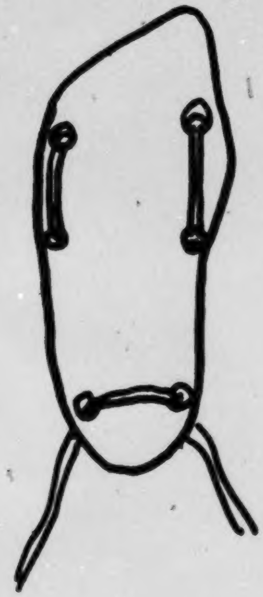
Compare and contrast the left side and right side of your body.

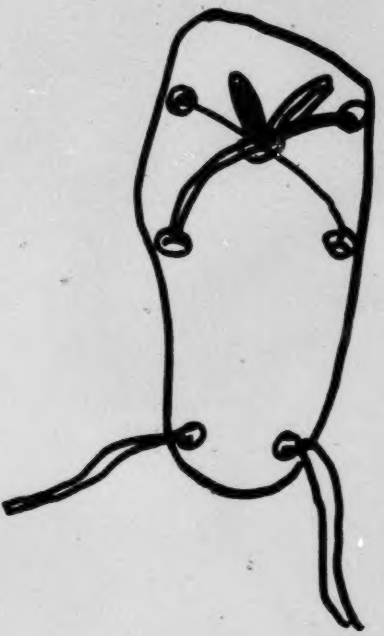
Use metric measurements rather then the english system of measurements to measure your body and feet.

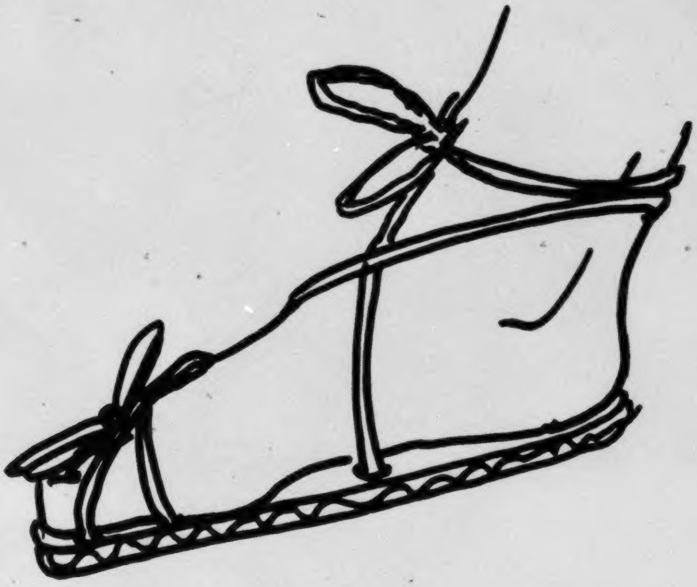
Visit a shoe factory or leather shop.

RESOURCE:

GIFTS AND NOVELTIES CHILDREN CAN MAKE; Becky Shapiro, Sterling Publishing Co., Inc., 1958.







MIDNIGHT PAINTING

Out of the dark comes a rainbow effect of color.

OBJECTIVES:

To demonstrate the concept of taking away black to produce color instead of the traditional adding color to white backgrounds.
To combine coloring, painting and etching skills.

MATERIALS:

White paper
Crayons of varied colors
Black poster paint
Pointed wooden popsicle sticks

PROCEDURE:

1. Crayon a white sheet of paper with squares of different colors. Lay the crayon on hard and thick.

2. Cover crayon with black poster paint.

3. Now you have midnight and can etch a picture out of the darkness with pointed wooden popsicle sticks.

4. DISCUSS:

What is a negative?

How is color produced?

What is a rainbow?

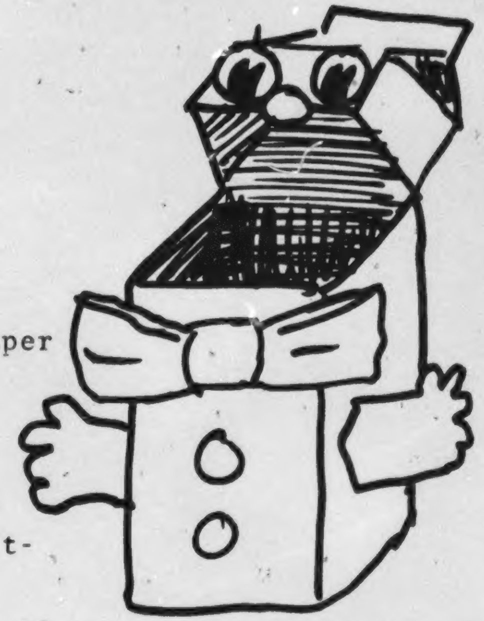
RELATED ACTIVITIES:

Do the same as above but use a different dark color of poster paint for another effect.

Try etching.

MILK CARTON PUPPETS

Puppets can be made from almost anything. Here's a good example!!!



OBJECTIVES:

To encourage expression of emotions.
To initiate verbalization.

MATERIALS:

½ gallon milk carton
Scissors
4" piece of yarn
Fabric scraps, felt or construction paper
Glue
Crayons, felt tip pen

PROCEDURE:

1. Cut milk carton as illustrated. Cut only three sides, leaving one end attached to act as a hinge.
2. Punch a hole through the back of top section. (as indicated)
3. Feed yarn through hole and tie off at end.
4. Cut out features; eyes, hands, clothes, hats, etc.
5. Glue onto milk carton.
6. Decorate as desired.
7. Pull yarn on back to make mouth open.
8. Create discussion with questions as;

   Who is your puppet?
   Is he like anyone you know?

RELATED ACTIVITIES:

Make small people carton puppets with pint size milk or juice cartons. Use for play therapy.

MOCK MARACAS

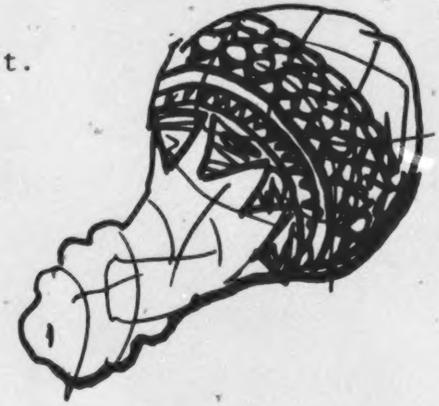
Children enjoy musical instruments that don't involve an enormous amount of skill to play. Percussion instruments are very enjoyable for this reason. In this activity children can make and play their own instrument.

OBJECTIVE:

To create a musical instrument.

MATERIALS:

Light bulb
Newspaper (cut into strips)
Thin wheat paste
Poster paints
Wheat paste
Bowl



PROCEDURE:

1. Wet strips of newspaper in the wheat paste solution.
2. Place them over the light bulb, overlapping them. (Take care to leave no holes and to cover the base of the light bulb completely.)
3. After the layers of paper are approximately half-inch thick, it should be set aside to dry. Careful handling will insure that the light bulb doesn't break.
4. After the maraca is thoroughly dry it can be painted.
5. When the paint is dry, the object should be rapped sharply on a hard surface to break the glass and cause a rattling noise. (Care should be exercised that the younger children through curosity do not attempt to open the instrument, because of the glass inside.)
6. DISCUSS:

   Can you name other musical instruments that can be made?
   What is harmony?
   What composes a band?

RELATED ACTIVITIES:

Organize a band or follow along to a record or song.

Make up a song to go with the music.

Identify other instruments.

PAINTING AND MIXING COLORS

Painting is an activity with many variations and skills in itself that is used not only as a means of expression, but is also used in many of the crafts and activities we do.

OBJECTIVES:

To create images.
To produce secondary colors through combined use of primary colors.
To utilize eye-hand coordination.
To practice fine motor skills and visual perception of colors.

MATERIALS:

- Primary colors
- Assorted brushes
- Assorted cups, containers
- Water color (transparent)
- Acrylics
- Powder tempera
  - Red
  - Blue
  - Yellow
  - Green
  - White
- Papers, drawing, watercolor, etc.
- Canvas
- Canvas boards

PROCEDURE:

LEVEL 1: Powder Paint;

Temperas, these are an excellent method for teaching children how to mix their own colors and it is easy: All it takes is any empty container, powder paint and water.

Some combinations that are always used are:

Yellow and Red - Orange
Green and Red - Brown
Red and Blue - Purple
Yellow and Blue - Green
White, Red and Yellow - Flesh

Use about 2 parts paint to 1 part water and always mix well. This paint is usable on paper, cardboard, plaster or paper mache.

LEVEL 2: Water colors;

These come in tube form and are readily used when squeezed onto palette or plastic plates. When these colors are used, a whole new list of names are also learned, for instance; red becomes cadmium red light or alsizarim crimson, blue becomes cerulean blue, yellow becomes yellow ochre or cadmium yellow light, green becomes ciridian or hooder green. These are for use on watercolor paper or paper thick enough not to wrinkly. Encourage use of lots of water to demonstrate the paints transparent properties.

LEVEL 3: Acrylics;

Use these to introduce the sutdents to a new set of tools, amterials and methods.

Nylon bristle brushes
Canvas boards
Palette
Acrylic paints

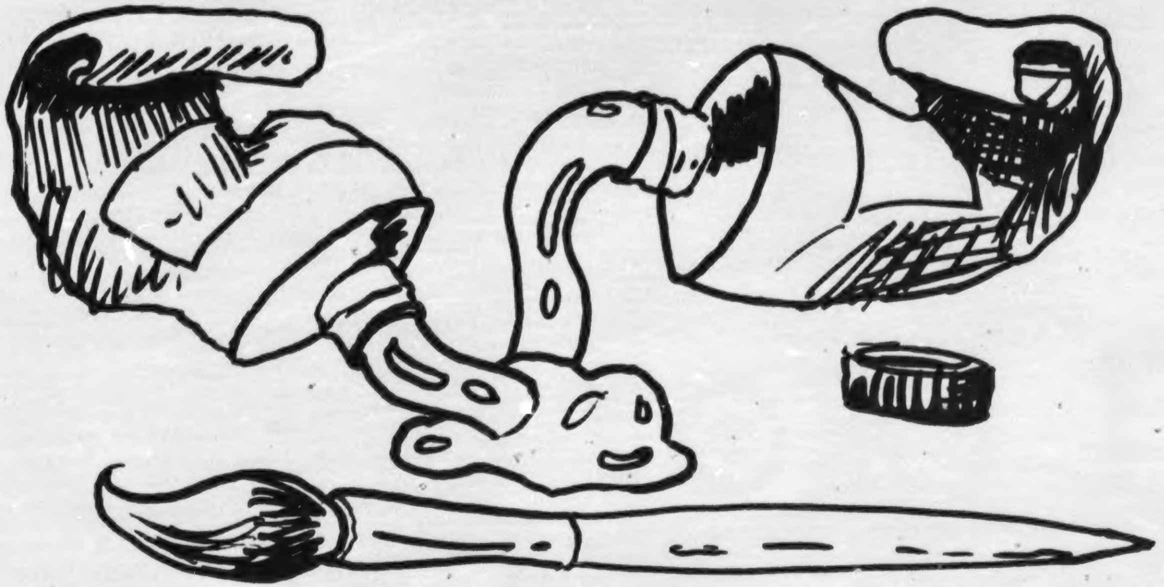
These paints are also water base, but are permanent when dry. They are relatively fast and can be painted over immediately. They can attain the same results as oil colors.

Canvas boards are easy to use and can attain a very professional level of work. Paints can be used again, by covering the palette with plastic or cellophane. Brushes are cleaned with soap and water.

A further step of this activity is assembling a stretcher frame, stretching canvas, covering it with a Gesso ground before painting.

RESOURCE:

THE COMPLETE BOOK OF ARTS AND CRAFTS, Arnold Arnold Pages 207-250.



PAPER MACHE HALLOWEEN MASKS **86**

This activity was developed to make Halloween more of a school-wide craft project, and to allow children to be anything or anyone they want to be for Halloween.

OBJECTIVES:

To encourage the use of a variety of materials in order to create a mask of the child's own.

MATERIALS:

Large balloons
Newspapers
Wheatpaste
Bowl for mixing paste
Cardboard
Cardboard tubes
Scrap materials (yarn, cotton, etc.)
Paints

PROCEDURE:

1. Inflate the balloon until it is a little bigger than your head, tie a knot in the neck of the balloon.

2. Mix wheatpaste in a tray or bowl. Sift paste into water and stir until it thickens slightly.

3. Tear newspaper into strips about half an inch wide. Dip them into the paste, one at a time. Remove the excess paste by running the strip between two fingers. Place the strips over the balloon until the entire surface of the balloon is covered with at least one layer of strips, hang up to dry over night. Follow this procedure until the mask is at least four or five layers thick. The last layer should be as smooth as possible. Let it dry completely overnight.

LEVEL 1:

Openings for the head and eyes are cut out by the instructor. Have the students wear the mask briefly, and paint the spot on the mask where the eyes are. Be sure he is correct, mark the spot and cut out holes for the eyes with a razor knife after it has been removed. Offer a wide selection of colors for the students to paint the mask.

LEVEL 2:

Openings for head and eyes are cut out by instructor. Hand out sheets of cardboard paper cuts, paper tubes to be used for ears, eyes, etc. Tape pieces on to mask with masking tape and cover with a layer of paste and strips, when dry, mask may be apinted, add yarn or cotton for hair, if desired.

LEVEL 3:

Students can cut openings for head and eyes. More complex shapes and three dimensional horns, ears, mouths, etc., can be made by folding and toping cardboard to mask and covering them with mache strips. Several kinds of found materials can be added, styrofoam plastic cups, wire, wood, etc. After a mask is painted, string, yarn wool, cotton, or bailing twine can be used for hair, if desired.

RELATED ACTIVITIES:

Students can wear masks for costume contests, prizes being for funniest, spookiest, etc.

After Halloween, masks can be entered in art exhibits and displayed.

Trace the art of mask making and its use with the Native American Tribes.

RESOURCES:

A HANDBOOK OF ARTS AND CRAFTS - Wankelman & Wigg

PAPER MACHE ROLLING PEOPLE

This is an interesting "wobble toy" and a good way to talk about "balance".

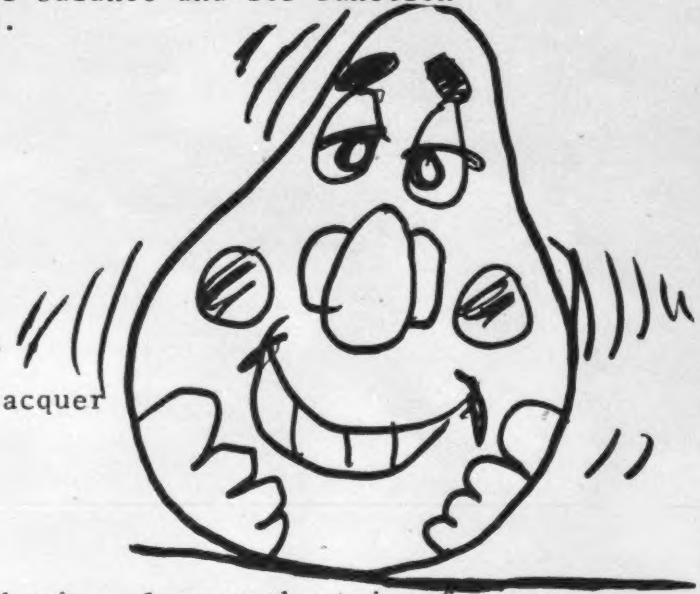
OBJECTIVES:

To encourage imagination and creativity in constructing a wobble head.

To introduce the concept of balance and its function with living organisms.

MATERIALS:

Pear-shaped balloon
Sandpaper
Brush
Small stone (2" long)
Newspaper strips
Wheatpaste powder
Water
Basin to mix wheatpaste in
Poster paints
Acrylic polymer or spray lacquer
Cups or orange juice cans



PROCEDURE:

1. Blow up balloon; tie.
2. Mix paper mache mixture in basin, place each strip of newspaper in mixture; allow it to become covered with mache.
3. Scrape off excess misture; wrap around balloon. NOTE: Do not make newspaper strips too soggy or else they will rip.
4. Cover the balloon 4-5 times.
5. Allow to dry overnight. (Put narrower end of balloon into a cup or plastic orange juice can - or hang balloon and allow it to air dry.)
6. When dry, cut a small opening at the top of the balloon (at the tie) 1½" diameter.
7. Pop the balloon.
8. Drop stone into hole.
9. Seal opening with remainder of paper mache.
10. Allow to dry.
11. Sand down any rough areas (Being careful not to be too hard.)

12. Paint the body.

13. Allow to dry.

14. Spray with lacquer or paint with polymer.

RELATED ACTIVITIES:

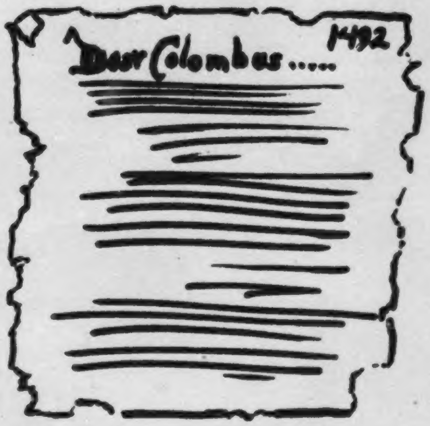
Build a "wobble toy" house from cardboard boxes.

Make a "wobble" group that can play together.

PARCHMENT PAPER

88

A fascinating way to teach history can be done by writing letters on home-made parchment paper.



OBJECTIVES:

To encourage creative writing abilities.
To review historical data.

MATERIALS:

Unlined paper
Pens
Ink
Oven

PROCEDURE:

1. Discuss a topic, period in history or event with the group.
2. Have them write an account of it, letter to an historical figure or a pirate treasure map.
3. When dry crumble it up and smudge the edges with the oil from your hands.
4. Place in hot oven (400-500 degrees) until the paper is the desired browness. Caution should be taken to watch the paper frequently.
5. Display or mail to another student. Careful, it tends to crumble.
6. DISCUSS:

   What significance do the tales have?

   How is paper made and who invented paper.?

   What other materials were used by Eqyptians, Indians, etc.

RELATED ACTIVITIES:

Use this method to develop map skills - for a treasure hunt.

Make and use quill pens. Make your own ink.

Make your own paper.

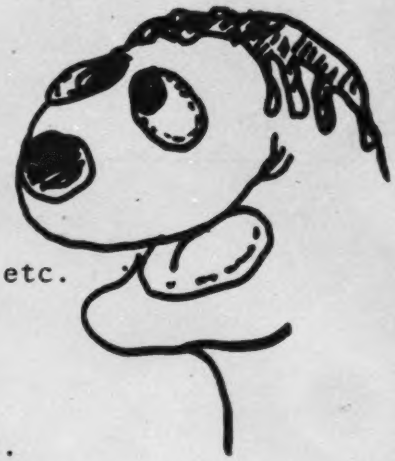
PUPPET FROM A SOCK

Puppetry is almost as old as mankind and is still an enjoyable pastime.

OBJECTIVES:

To encourage imagination to create a likeable character from an old sock.
To promote language development and verbalization.
To develop fine motor skills.

MATERIALS:



Scraps of felt
An old sock
Scraps of yarn
Needle and thread
Rubber cement
Cardboard pattern for eyes, tongue, ears, etc.

PROCEDURE:

1. Place patterns on felt.

2. Cut out eyes, tongue, ears, etc., from felt.

3. Place sock over your hand using your thumb for the bottom jaw and your four fingers for the top, note where pieces of felt will be sewn - pieces may be glued on with rubber cement if working with very young children.

4. Sew felt pieces on to sock.

5. Cut lengths of yarn, sew together to make hair. Attach hair to head of puppet.

6. Encourage play acting between finished puppets.

7. DISCUSS:

What can you name your puppet? Can we start a play with the puppet? What famous puppets star on TV? How does your puppet feel today?

RELATED ACTIVITES:

Write a play for your puppet characters. Tape record your script, have child express various emotions through his puppet.

SEWING MEDICINE BAG

A medicine bag is a small pouch commonly used by the American Indian. An Indian had faith in the power of found objects. In his bag he had collected small feathers, a piece of fur, a strange and beautiful shell, a flower, etc. Each was an object of magic power that would help the Indian in times of emergency.

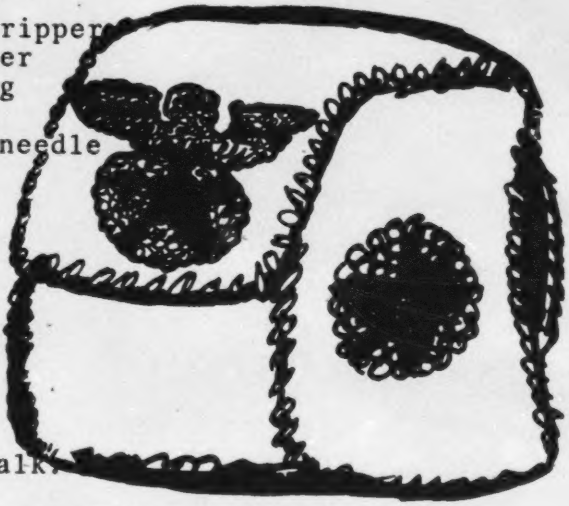
OBJECTIVES:

To introduce the religious beliefs of Indians.
To introduce the basic sewing of zig-zag stitch.
To utilize the mathematical concept of thirds.

MATERIALS:

Sewing machine
Light weight leather
Cardbaord pattern
Set of directions
Thread
Scissors
Beads
Paint

Seam ripper
Leather
Lacing
Chalk
Hand needle
Pins
Ruler



PROCEDURE:

1. Display completed medicine bag.
2. Display directions.
3. Outline pattern on leather with chalk.
4. Mark piece into thirds with chalk and ruler.
5. Sew two straps on either side of the botton third.
6. Sew two sides two-thirds of the way up.
7. Fold flap over.
8. Decorate by sewing on beads or painting an Indian design.
9. Wear on your belt.
10. DISCUSS:

Where did the Indian get leather?
How will you use a medicine bag?
How is yours' individualized:
How did the Indians decorate their bags?
What herbs and roots are used for medicinal purposes?
Are these used today?

RESOURCES:

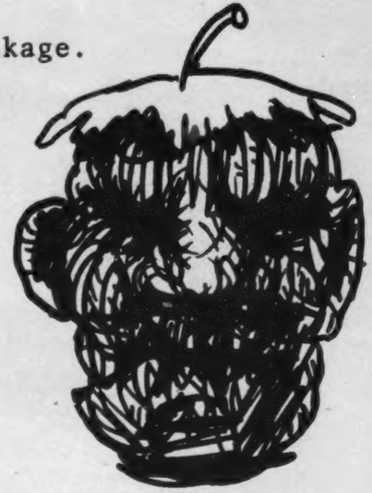
LIVING LIKE INDIANS, Assoc. Press, NY 1961, Allan A. Macfarlan

SHRUNKEN HEAD

Make a spooky Halloween centerpiece and teach oxidation at the same time.

OBJECTIVES:

To create a Halloween decoration.
To illustrate oxidation.
To illustrate evaporation and shrinkage.



MATERIALS:

Apple
Knife
Felt strip
Glue
Vinegar

PROCEDURE:

1. Peel apple.
2. Carve a face into the apple.
3. Dip the apple in Vinegar.
4. Attach a piece of felt to the top of the apple head to make a hat or scarf or fray felt to make hair.
5. Set face aside for 1-5 hours and face will get brown and shriveled.
6. DISCUSS:

   Why does the apple shrink?

   What other things are made from apples?

RELATED ACTIVITIES:

Use apples for cider, apple sauce, pie, etc.

Dry other fruits and observe.

Create a body for the head using a soda bottle and various materials.

SMOKED PAPER DRAWING

Smoke that comes from candles can be good for something. Here is a fun way to experiment with carbon drawing.

OBJECTIVES:

To familiarize students with the process of carbonization.
To encourage creative expression.

MATERIALS:

Heavy paper (bond paper)
Wax candle
Matches
Nail

PROCEDURE:

1. Hold the lit candle under a flat piece of paper. The carbon smoke should rise onto the paper and collect there. Be careful not to burn the paper.
2. Coat the paper thoroughly with the soot.
3. Use the nail to draw on the paper. Create any type of style.
4. DISCUSS:

   What makes the soot?

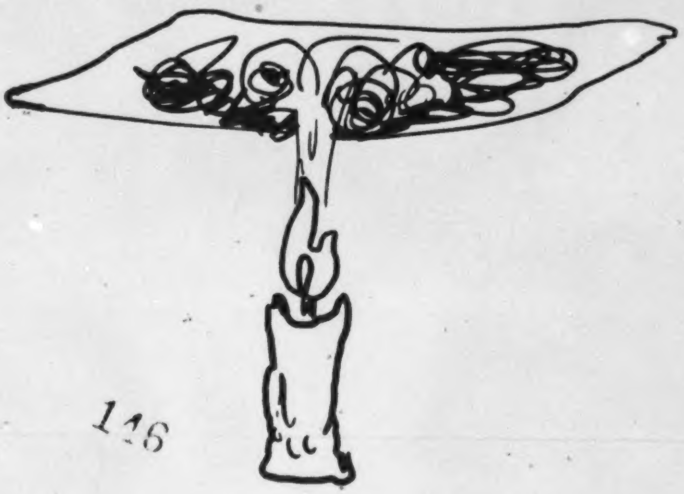
   Why does it cling to the paper?

RELATED ACTIVITIES:

Observe sets of smoke stacks that are discharging white and black smoke. See if soot is found nearby.

Discuss pollution and the methods of control.

Write your results of smoked paper.



SPORTS COLLAGE

A sports collage of famous athletes provides a boost in motivation and sparks interest in young school age athletes.

OBJECTIVES:

To inspire the students to participate in a sport.
To use as a preliminary exercise for creative writing or story telling.

MATERIALS:

21" X 24" poster board (or larger)
Old magazines
Glue
Scissors
Construction paper (varying sizes)

PROCEDURE:

1. Cut out pictures from magazines and glue them onto poster board. Construction paper can be used to give a contrasting background. Try to show different aspects of a sport (ie. winning, losing, joy, sadness, pain, elation, etc.)

2. DISCUSS:

Is this a team sport?

What is team spirit?

Is every member on the team important? Why?

RELATED ACTIVITIES:

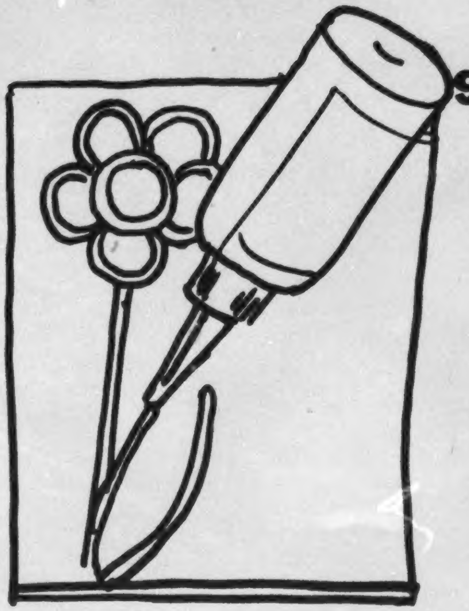
Have the children pretend to be a sports announcer who relates the actions of the game into a tape recorder. (Share the recordings with the class.)

Write a column for the sports section of a class newsletter.

Read a story or biography of a famous athlete.

Play the sport or go to a stadium to see a particular sport.

STAINED GLASS



This activity was introduced to us by two Iranian interns and is a popular activity with all ages.

OBJECTIVES:

To introduce the art of simulated stained glass.
To encourage creative expression.
To demonstrate use for scrap plexiglass. (recycling)

MATERIALS:

Sheet of plexiglass or scraps
1 tube of palstic "lead" liner
Assorted opaque "stained glass" paints
Paper, pencil and tape

PROCEDURE:

1. Make a simple outline drawing on a sheet of paper, making sure it will fit on the piece of plexiglass.

2. Tape the picture to the back of the plexiglass.

3. Squeeze a line of lead liner over the same lines as your picture on top of the glass. Be careful to start and stop at the beginning and end of a line.

4. Let the liner dry thoroughly, (overnight).

5. Fill the spaces with stained glass paint, let dry.

6. Spray the backside of the picture with white spray paint.

7. DISCUSS:

   Where is stained glass used most ofter?

   What materials are used in real stained glass?

RELATED ACTIVITIES:

Have a group combine their pictures to make a large stained glass window or display.

Discuss prisms and light refraction.

THAT YUMMY "PUDDING PAINT"

The unique point about this project is that young artists can eat what they create and clean up is a lick.

OBJECTIVES:

To develop tactile awareness.
To encourage creative expression.

MATERIALS:

Pudding - 3 different flavors
Cups
Paper

PROCEDURE:

1. Pour pudding into cups.
2. Finger paint with pudding on paper.
3. After painting the artist may indulge in his work of art.

RELATED ACTIVITIES:

This is a good method to teach number and letter identification to the Learning Disabled child.

Have a blindfolded child identify puddings through taste and smell.

Have the children prepare the pudding themselves so as to learn ingredients, temperature and measurement.

A-MAZE-ING

A-maze yourself by making this fun game from simple free materials!!!!

OBJECTIVES:

To construct a maze.
To perfect fine motor coordination.

MATERIALS:

Cardboard
Glue
Styrofoam "squiggles" used for packing
Marbles

PROCEDURE:

1. Introduce mazes to the students by letting them try to complete a maze done on paper or by using a plastic one from a store.

2. Cut cardboard to desired size (12" to 15" square is adequate).

3. Give children a pile of the styrofoam "squiggles" and let them paste the pieces on the cardboard, directing them to make a maze, or alleys where the marbles can be maneuvered. (For younger children you can draw a pattern for them to follow.)

4. The mazes can be exchanged and used by the children for contests.

5. DISCUSS:

   Did your marbles go through the maze faster the more often you tried?

   Is your maze easy or complicated?

   Can you maneuver your marbles as easily through the other children's mazes?

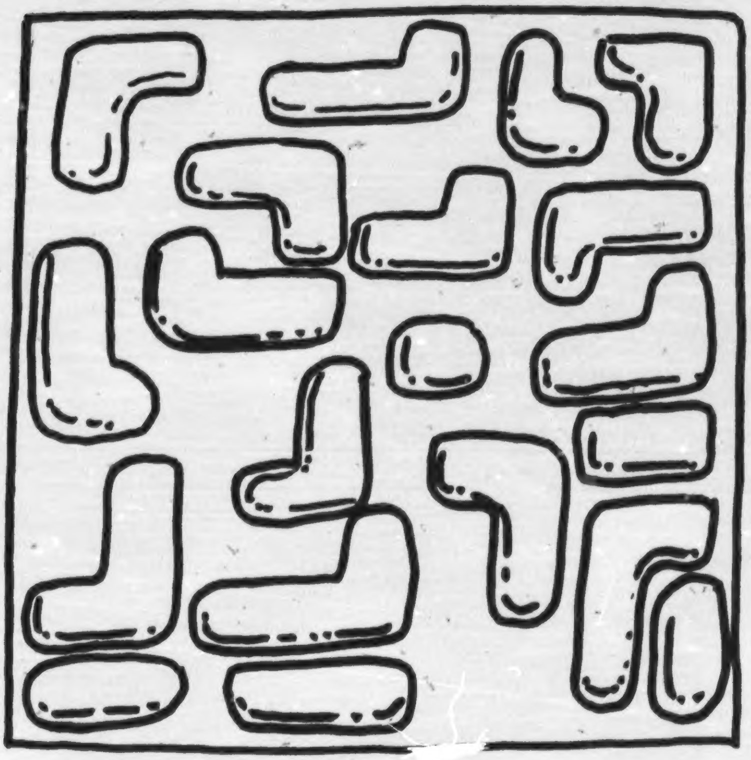
   What is a maze?

RELATED ACTIVITIES:

Mazes can be used to teach spelling words or simple arithmetic facts if you label the exits with numbers or letters. The children put together letters into words, add, subtract, multiply or divide the numbers.

RESOURCES:

SPELLING MAZES, Sandra Kopell, Grosset & Dunlap, 1975.



I LOVE NEW YORK MARATHONERS CLUB

This activity combines running with United States geography and history. This idea was developed with the "I love New York" campaign but can be adapted to other areas with the hope that cross country running might receive a new boost.

OBJECTIVES:

To inspire interest in the art of jogging.
To present aspects of the State's history and geography.
To review safety and rules while running along the road.

MATERIALS:

Running course which has been marked for distances, such as, ¼ mile, ½ mile, 1 and 2 miles, etc.
Bulletin Board
Maps
Index Cards

PROCEDURE:

1. On a large bulletin board display a colorful map of the area to be studied. Also post rules and review them.

2. Mark historical, scenic or significant locations. Short distance sites (such as in New York City, ie. Central Park, World Trade Center) can be included. The more sites the more interest generated.

3. On a destination card, which has been previously prepared, describe the key information for a particular site. This information can be anything to spark interest in the state's history (ie. dates, population, interesting facts).

4. At each location the student will receive a card marked "Advance to ______________." and a mileage token or award card. These can be added to the previous awards for a grand total (to be charted).

5. Decide on a grand total for a trophy and entrance to the "Runner's Hall of Fame".

6. DISCUSS:

   What points of interest were observed?

   What safety precautions and rules of the road need to be observed while running?

   Did you see other runners?

   Is your speed getting better?

RELATED ACTIVITIES:

Participate in a local marathon.

Publicize your program in the school paper.

Photograph the historic sites that were passed.

Have an awards dinner.

Compare graphs.

PIRATE TREASURE HUNT

A "Treasure Hunt" offers a great opportunity to implement learning experiences in a fun way.

OBJECTIVES:

This activity increases the ability to read and follow instructions (particularly written in the form of a map).
To stimulate peer cooperation and team work.
To increase awareness of the surroundings, particularly in the area of nature identification, architectural awareness and geographical knowledge.
To stimulate interest in pirates and pirating thus spurring interest in other historical events.

MATERIALS:

This activity is best suited for any school campus which has a wide range of terrain, trees, buildings, flowers, etc.

Paper (for drawing maps)
Tin foil (for wrapping prizes)
Watch
Prizes
Shovels (to dig and bury treasure)
Compass

Materials for pirate costumes are optional but can provide a fun build-up activity.

PROCEDURE:

1. Preparation should begin approximately one week before the event. Teams, containing no more than six students each, should be selected. Initially students learn to identify some trees and local flora. Directions to the treasure may also be given with compass bearings if the student has been shown how it is used. Terms describing the local area and terrain should also be discussed (ie. hill, field, barn, chicken coop, colonial house, dorm, etc.). A key list is then made of all the possible terms that will be used in map identification points. Students may refer to this for descriptions.

2. With a high degree of secrecy, teams begin the process of making treasure maps. Each team will make a treasure map which will be exchanged with another group. Words on the key list are used for identification sites and objects.

3. Maps can be designed to look authentic. Baking paper in an oven for a short period can produce an aged parchment effect. (See activity for making Parchment Paper) (Precaution: watch paper so that it does not burn.)

4. One member is appointed "pirate captain". His duty entails encouraging his team both in preparation and the actual treasure hunt.

5. Teams select members of their own team to bury the treasure. The treasure can be any kind of prize but a box of chocolate coins is especially good.

6. After burying the treasure an "X" is made out to cloth strips and should be used to mark the site.

7. On the day of the contest teams are lined up at the starting site. Teams should be reminded that a group effort will be more successful during their search.

8. After the treasure is found, pirates can have a party or celebration as a climax for the week of preparation. Students should be reminded that the treasure has to be divided equally among team members, so that the "pirate spirit" does not get carried too far.

9. DISCUSS:

Who were the pirates?
Where did the pirates bring their treasure?
How do compasses work?
Who makes and uses maps?
What are the different kinds of maps?

RELATED ACTIVITIES:

To increase an interest in the surrounding area, other events, such as a scavenger hunt, can be attempted.

Prepare a map of the entire campus. Include the outstanding geographical and physical landmarks of the area.

PREDATOR / PREY GAME

Here's a game that will promote the awareness of factors influencing population numbers and, to a lesser degree, the pyramid of numbers in the animal kingdom. The game uses the excitement aroused in the game of "hide-and-seek" to motivate aprticipation.

OBJECTIVES:

To be able to state relative sixes of populations between predator and prey animals and some reasons for this relationship.

PROCEDURE:

1. In a meadow, divide up a group of children into foxes and rabbits (4 rabbits/fox).

2. From a central starting point the rabbits are given two minutes to run and hide. The foxes eyes are shut.

3. The foxes then begin looking for the rabbits. If a fox can spot a rabbit at any time, he/she calls out, "I see you rabbit. . .(then the person's name)". That rabbit goes to the central starting point to sit out the rest of the round. If a rabbit can sneak up behind a fox and say, "I got you, fox. . .(then the person's name)", the fox goes and sits out the rest of the round also. All animals have to imitated in their means of locomotion.

4. DISCUSS:

   Why can a fox be caught? (This is as though a rabbit was smart enough to hide from a fox, consequently the fox starves to death.)
   When was it easiest for a rabbit to be spotted?
   Why are there more rabbits than foxes? (reproductivity, more predators, pyramid of numbers, vegetarians, food chain)
   What happens if a fox can't catch a rabbit?
   When do colors and/or patterns help or hinder in survival?
   How do rabbits run? (in a circle, zig zag, on hills?)
   What adaptations do foxes have for survival (good eyesight, good smell, good hearing, intelligence, endurance.)
   What adaptations do rabbits have for survival (big ears, speed, larger broods)?

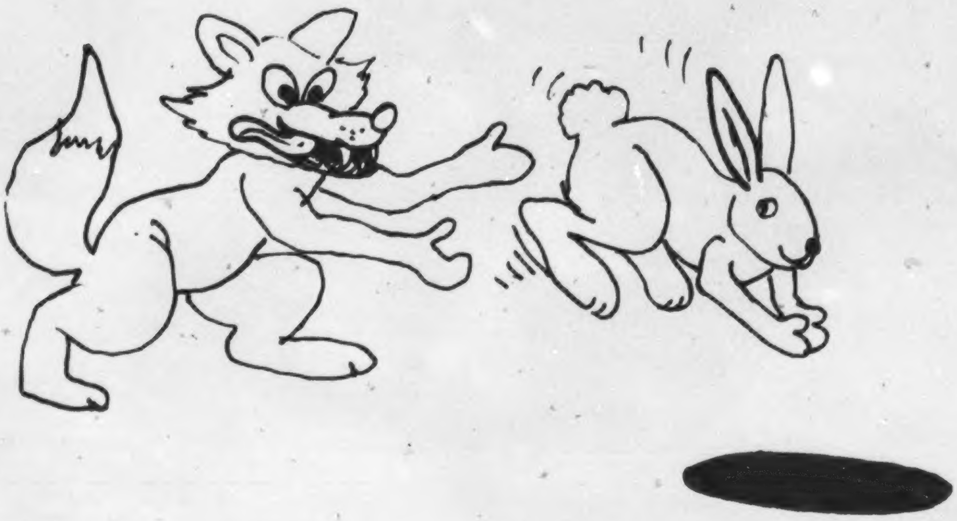
RELATED ACTIVITIES:

1. Test colors and patterns versus survival rates, colored toothpick game, pop corn game (O.B.I.S.), food chain game, study adaptations of animals, insects and birds (color, anatomy, senses (owls have better eyes for night hunting), reproductive numbers).

2. Use different habitats using the same animals to compare camouflage effects.
3. Use different animals in a variety of habitats.

RESOURCES:

OUTDOOR BIOLOGICAL INSTRUCTIONAL SERIES, O.B.I.S., BASIC ECOLOGY, Buchsbaum, Boxwood Press, Pittsburgh, Pa.



TRASH CAN SCOOP BALL

100

Often it becomes necessary to improvise when trying to keep a groups' interest. This is a good exercise.

OBJECTIVES:

To help develop eye and hand coordination.
To promote group parricipation.

MATERIALS:

Stick
Small ball
Trash container
Open space, field, asphalt area

PROCEDURE:

1. The batter tosses the ball in the air and his it with the bet. Try to hit the ball as far away as possible, making it difficult for the fielders to retrieve. The present batter can bat again and again until the ball is thrown into the can.

2. The fielders (any number) attempt to catch the ball and then throw or roll the ball into the trash container. After a hit the can is placed exactly where the batter was standing with the open end facing the fielders.

DISCUSS:

3. Should any other rules by made? What is the limit a batter should be up? How do we choose who is up first?

RELATED ACTIVITIES:

For less coordinated children have them hit the can with the ball rather than throw the ball in.
Teach the children "cricket" or other ball games.

SNOW SNAKE

This Snow Snake game has been very popular in many Indian tribes across America. It was played as a game within a tribe and also as inter-tribe competition.

OBJECTIVES:

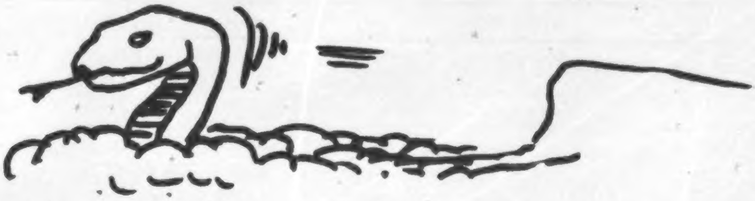
To introduce a Native American game.
To elicit team spirit.

MATERIALS:

3' to 5' branches (one per student or any member). They should be straight and approximately 3/4" to 1½" in diameter.
Knives for carving

PROCEDURE:

I. The snow snake may be made individually or by groups of students. Those made of ash or hickory wood make good ones. Find a 3' - 5' straight branch with one end slightly bent upward (you'll find this usually occurs when the branch joins the truck). Carve the bark off and smooth the bottom of the branch. (The whole "snake" can be elaborately carved if the students wish.) Math can be incorporated by having the students measure the branch for the proper diameter (3/4" to 1½") and length (3'-5'). The snake should look similar to this:



II. The Track.
To make the track on which the snakes will race, have the students drag a 6"-8" diameter log through the snow. The snow can be packed and even made icy by pouring water over it. The track should be at least 100' long and probably longer, depending upon the strength and skill of the students. (The Indians claim to have used some tracks up to ½ miles long for their races.) Widen the beginning of the track to be somewhat "fan-shaped".

III. Throwing the Snake.
The snow snake is held below the waist with one or two hands. The person runs to the start of the track and releases the snake by sliding the "head" (front end) along the ground first and then releasing the "tail". (The snake can be released in any manner. Some Indians threw it like a javelin). The idea is to throw it so it stays in the track. The winner of the competition is the person whose snake is thrown the farthest within the track.

IV. Additional Ceremony.

The Indians often played this game among clans and were somewhat formal about the competition. You can have the students divide into small "clans". They can then choose their best snow snake and best thrower to represent them in the competition. Have the students give a name to their clan (local animals, plants, etc.). Then, when the clan is about to compete, the representative of the clan states: "I am Black Eagle (students choose their own name), of the Gray Fox clan. This is Fast Rattler , he will go long and straight and will make my clan proud". The snake is then thrown while all studnets stand slong the path to cheer. (Spectators should stay far away from the start to avoid accidents, should the snake not stay in the track.) The stopping point is either marked by sticking the snake upright in the snow or by a special marking stick which each clan or Indian has made.

OTHER FACTS:

1. Indians would run through their villages yelling "su-ha, su-ha, su-ha" when they were trying to organize a game of snow snake.
2. Some accounts say the track was made by "taking the smallest boy by his feet and dragging him through the snow".
3. The clan or Indian that won the competition would go home with the snow snakes of the other competitors.
4. The snow snakes were often looked upon as spirits and were often addressed as you would a dog or cat. The Indian would talk to the snow snake before throwing it.

DISCUSS:

Why do you think the game is called snow snake?
What other games do we play that are similar?
How can the snakes be made to go faster?
How can the track be improved?

RELATED ACTIVITIES:

Carve more elaborate snow snakes, try waxing it for speed.
Research the history of the game and learn some of the Indian names.
Learn to identify hickory and ash trees in the winter.

REFERENCES:

NATURE CRAFTS, Ellsworth Jaeger, MacMillan Publishing Co., New York, 1973.

(Personal Reference: Nick Shoumatoff, Dir, Trailside Museum, Pound Ridge Reservation, Cross River, N.Y. - There are also excellent reference books in the Museum's Library of Indian History.)

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STATEMENT OF PURPOSE

Edwin Gould Outdoor Education Centers exist to provide opportunities to enhance the academic, social and aesthetic growth of individuals of all ages and to encourage them to develop their full potential as human beings. This is done by traditional as well as alternative methods. Learning is most efficient and effective when based on the hands-on or sensory awareness approach. Our participants are encouraged to develop a concern for others and a sense of personal awareness through direct experience.

We believe that learning takes place in many environments. Our primary emphasis is on the greater use of the out-of-doors as a learning resource. We awaken the participant to the many learning opportunities afforded by the outdoors. Learning is approached as an inter-disciplinary and multi-disciplinary activity. Outdoor education is designed to serve as a curriculum enriching and life enriching process enabling the learners to appreciate and understand the world of which they are a part. We are educating for a better understanding of the interrelatedness of all things on Sunship Earth.

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